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AUTHOR Clapham, Pete, Comp.
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ABSTRACT

This guide was developed to promote responsible hazardous waste management by Ohio citizens, citizens who are interested in upgrading operations of existing waste facilities, oppose the development of any new landfills, and those who promote the establishment of modern, efficient facilities. Information is presented in six chapters. The hazardous waste problem in Ohio is addressed in chapter 1. A framework for hazardous waste management is presented in chapter 2, including a flow chart for issuance of a permit to install and operate a hazardous waste facility. Types of hazardous waste management facilities are considered in chapter 3. These include recycling, chemical treatment, detoxification, solidification, reduction of hazards, and disposal. Citizen involvement in the permitting and siting process, accidents and illegal/abandoned sites, and effective citizen involvement are considered in chapter 4, 5, and 6 respectively. At the conclusion of each chapter, there is a series of key questions reviewing the more important elements of the chapter and a list of suggested readings to enable citizens to find more information on the topics discussed. (Author/JN)

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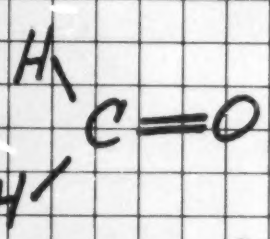
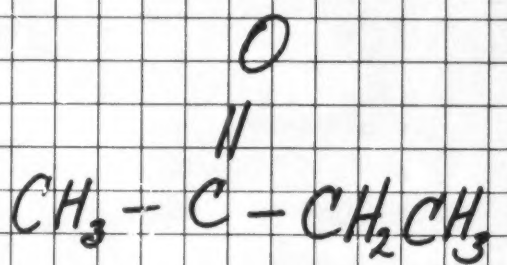
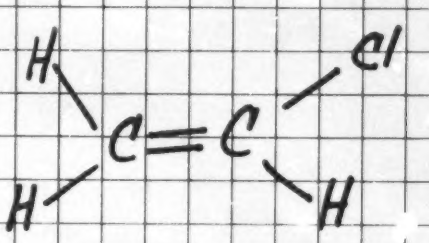




A Citizen's Guide To Hazardous Waste Management In Ohio



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Researched And Compiled

Dr. Pete Clapham
Clapham Associates
Cleveland, Ohio

Editorial Review Committee

Tom Carlisle
Manager, Technical Assistance and Waste Management Section,
Division of Hazardous Materials Management,
Ohio Environmental Protection Agency

Laura Evans
Hazardous Substances Director, League of Women Voters of Ohio

Timothy G. Hayes
Virginia Project Director, Environmental Defense Fund

Katherine Durso-Hughes
Waste and Toxic Substances Project, Environmental Action Foundation

Bernard Lukco
President, Ohio Alliance for Environmental Education

Nancy McVicar
Reporter, Columbus *Citizen-Journal*

Richard P. Moffa
Environmental Policy Analyst

John Steeler
National Conference of State Legislators

Lorey Roggenkamp
Public Participation Coordinator
Division of Hazardous Materials Management, Ohio Environmental Protection Agency

Edited

Mary S. Donaldson
Stephen H. Sedam

Prepared By

The Ohio Environmental Council with partial financial assistance provided through a grant from The Columbus Foundation

Date

May, 1982

Ohio Environmental Council
1500 West Third Avenue
Columbus, Ohio 43212

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Preface

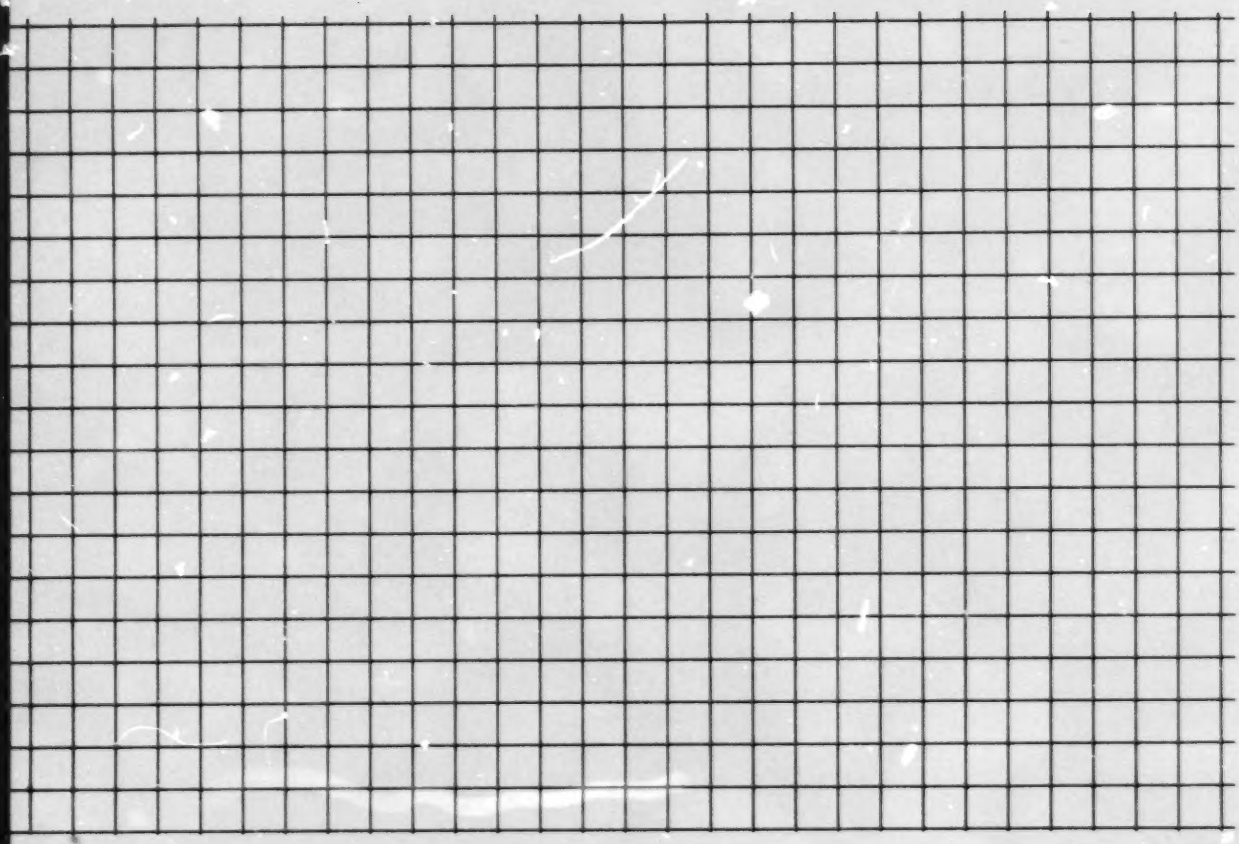
Along with the technological revolution has come the generation of many by-products that were heretofore unseen. Hazardous waste is one of those by-products. The manufacture of synthetic clothing, computers, microwave ovens, chrome furniture, and many other common products has contributed to the generation of over 50 million tons of hazardous waste annually in the United States and over five million tons annually in Ohio.

The intent of this publication is to promote responsible hazardous waste management. It is incumbent upon the citizens of Ohio to participate responsibly in hazardous waste management decisions affecting their community and their state. It is upon this premise that this citizens guide was written.

There are citizens who are interested in upgrading the operations of existing waste facilities, those who oppose the development of any new landfills, and still others who promote the establishment of modern efficient facilities. Whatever your personal concern is, this guide is designed to assist you in understanding how hazardous waste is managed, how to obtain further information, and how to become an effective participant in public decisions regarding the management of hazardous waste in Ohio.

The guide explains what constitutes a hazardous waste, the federal and state framework for managing hazardous waste, various types of management technologies, how to become involved in the permitting and facility siting process, how to report a hazardous materials spill, and how to recognize an abandoned hazardous waste dump site. At the conclusion of each chapter, there are a series of key questions reviewing the more important elements of the chapter and a list of suggested readings to enable you to find more information.

At the back of the publication, there is an evaluation sheet and an order blank for additional copies. We request that you return the evaluation sheet to the Ohio Environmental Council with your comments even though you may not be interested in additional copies of the guide. These evaluation forms will aid us in determining the effectiveness of this publication.



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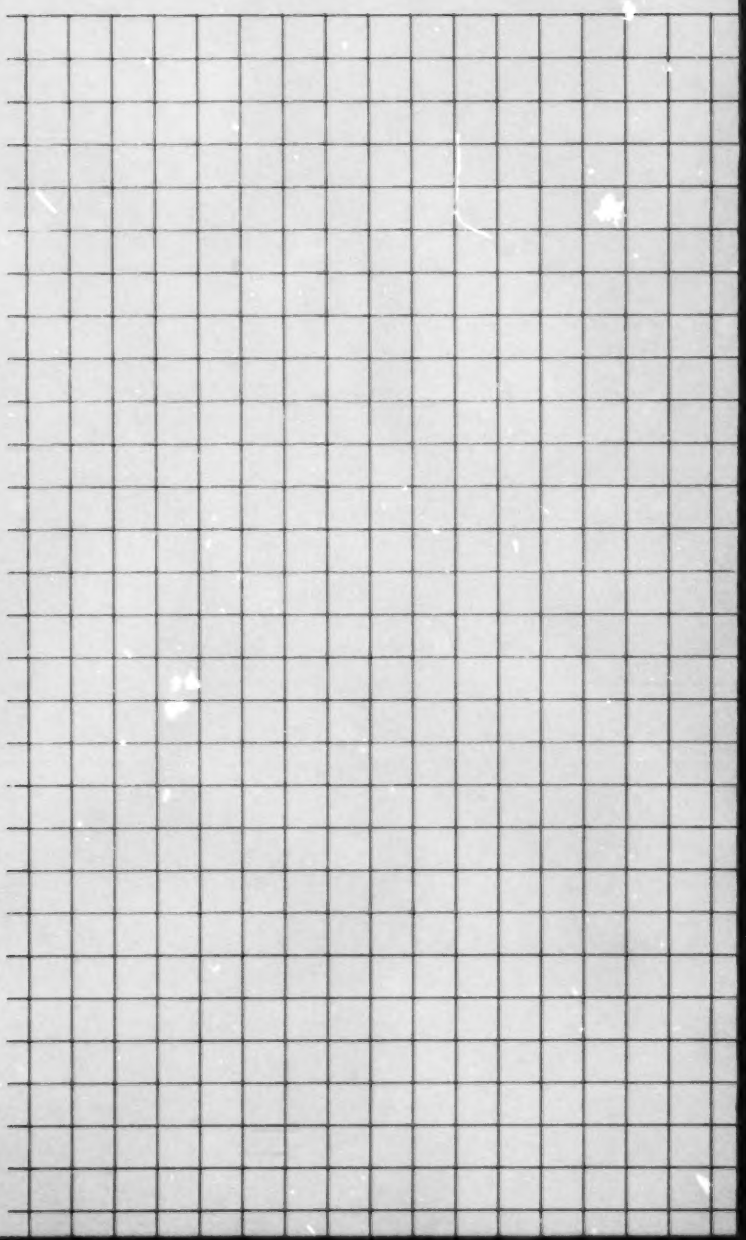
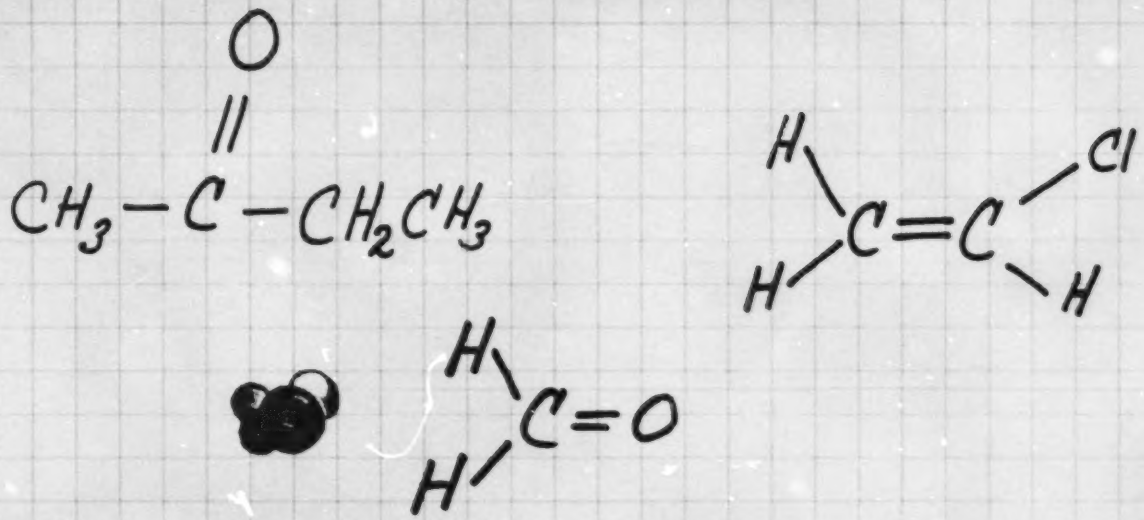




The Hazardous Waste Problem In Ohio

What is a Hazardous Waste?

Hazardous wastes include a broad number of substances, and it is surprisingly difficult to define them. A modern industrial society produces thousands of different waste streams. Some pose no hazards to people, others are clearly hazardous, while others are marginal. Some are toxic, others are cancer-producing, still others are flammable or explosive.

The hazards inherent in modern industrial society have become increasingly clear since World War II. New chemicals have been added to the environment at an accelerating rate. The list of synthetic industrial chemicals is growing by about 1,000 per year, and EPA estimates that about 70,000 synthetic industrial chemicals are in use in the United States today.

The significance of this figure is not in that synthetic chemicals are "bad" or that naturally occurring chemicals are "good". Many of the improvements in our standard of living in the last 40 years stem from the advances in the chemical industry, and numerous natural chemicals, such as snake venom, pose clear risks to people. However, animals have developed systems to protect themselves against some naturally occurring materials. People have lived with them for thousands of years and understand the risks they pose, at least to some degree. The significance of a synthetic chemical released into the environment is largely unknown. The effects on people are seldom checked in detail, and not until recently has there been a concerted effort to restrict the degree of contact between hazardous chemicals and people.

The decade of the 1970's saw the enactment of several major laws at both federal and state levels intended to control the risks inherent in hazardous materials. These include materials in the workplace, the transportation system, our drinking water, and the air we breathe, as well as wastes. The range of hazards dealt with by these laws almost boggles the mind.

The key law governing hazardous waste management, the Resource Conservation and Recovery Act of 1976 (RCRA), identified seven major groups of hazardous wastes with very different basic characteristics:

Ignitable materials can burst into flame under conditions that can occur in the environment. They may ignite in the presence of a spark, as the result of friction, or through absorbing water. They may also cause other substances to burn in a way that causes a hazard.

Corrosive substances are those that can corrode other materials. The most common corrosives are strong acids or alkalis but they may include other materials as well. The test for corrosivity adopted by EPA is the ability to corrode steel at a rate greater than one-quarter inch per year.

Reactive materials are unstable chemically. They react violently under conditions found in the environment, such as upon the addition of water. The most dangerous reactive substances explode or release toxic gases when mixed with water.

Extractible (EP) Toxic materials are those containing substances that can be mobilized by the slightly acid water that would be expected to percolate through a landfill or other disposal site. These materials include heavy metals, insecticides, and herbicides.

Toxic materials are those whose toxicity can present a substantial hazard to humans (or to test

animals, if data on humans is lacking) at low concentrations. The regulations governing toxic materials must be integrated with those of the Toxic Substances Control Act, and they are not complete at this time.

Infectious substances are biological wastes capable of infecting humans and/or capable of producing disease. Regulations to control the disposition of these wastes have not yet been released by EPA.

Radioactive wastes are materials with high amounts of radioactivity. Regulations governing their disposition must be integrated with those of other legislation governing radioactive materials, and they have not yet been released by EPA.

Industry and Hazardous Wastes in Ohio

Ohio is a major industrial state. It is home to about five percent of the U.S. population on about one percent of the country's land area. Its industrial production centers on automobiles, aircraft, boats, iron, steel, metals and plastics, and food processing. Its industrial output and corresponding industrial waste production are surpassed only by New Jersey and are about equal to those of Illinois. A high proportion of the state's population lives in the urban industrial centers of Cleveland, Cincinnati, Columbus, Akron, Dayton, Toledo, Canton, and Youngstown. Much of the remainder is rural. Ohio agriculture tends to be intensive and uses many chemicals which are as dangerous as those found in heavy industry but which are not usually regulated as hazardous waste.

Drinking water comes from several sources, all of which may be contaminated by hazardous wastes. The cities along the "North Coast" take their water from Lake Erie. The Ohio River serves as the water source for most of the people along its banks. The remainder of the state obtains water from reservoirs or from well fields. Drinking water supplies may become contaminated through the mismanagement of hazardous wastes. Only by insuring the proper management of hazardous waste and the long-term security of waste disposal areas is it possible to assure that hazardous wastes do not enter drinking water.

Industrial waste generation in Ohio is spread over about 13 broad industrial groups. Table 1 summarizes the relative contributions of these groups and their geographic distribution by Ohio EPA district. Table 2 shows the production of some of the more hazardous of these wastes. It is more difficult to estimate hazardous waste production, as the amount produced depends on the definition of "hazardous." Depending on the definition and assumptions used, however, Ohio produces between 2.5 and 10.4 million tons per year. The most likely estimates fall between five and eight million tons per year. The sources of hazardous wastes are summarized in Table 3. Figure 1 shows the distribution of permitted treatment, storage, and disposal sites throughout the state.

Table 1

Industrial Waste Production From Manufacturing In Ohio

Group	Estimated Waste Production	Number of Plants	Location of Plants NE	SW	NW	CE	SE
Textiles	0.08	98			•	•	
Paper	8.90	375	•	•	•	•	•
Printing	0.81	1,945	•			•	•
Chemicals	2.13	827	•	•	•	•	•
Petroleum	0.37	168	•	•	•		
Rubber & Plastics	0.28	803	•	•	•	•	•
Leather	0.13	62					•
Stone, Glass, Concrete	6.55	1,052	•		•	•	•
Primary Metal	30.70	703	•	•	•		•
Fabricated Metal	25.20	2,655	•	•		•	•
Machinery	4.00	3,181		•	•	•	•
Electrical Machinery	0.37	749	•		•		•
Transportation	0.20	416	•	•	•	•	
Totals	79.72	13,034	39.0	16.6	13.4	5.5	5.0

Waste production is in million tons per year. These industries account for about 98.8% of total hazardous waste generation in the State.

Source: State of Ohio Hazardous Waste Management Plan, Parts I and II to the State of Ohio Environmental Protection Agency, Battelle Columbus Laboratories, December 1978.

Table 2

Hazardous Industrial Wastes Produced in Ohio

Waste	Generation
Pesticides	4
Acids	42,800
Caustics	2,710
Pickle Liquors	1,230
Metals	2,069
Cyanides	350
Phosphorus Compounds	632
Halogenated Hydrocarbons	473
Non-halogenated Hydrocarbons	357
Oils	85
Plastics	1,370
Resins	314
Paints	23
Other Inorganic Materials	23,100
General	4,040
Total	79,500

All data are in thousand tons per year.

Source: State of Ohio Hazardous Waste Management Plan, Parts I and II, to the State of Ohio Environmental Protection Agency, Battelle Columbus Laboratories, December 1978.

Table 3

Hazardous Waste Production In Ohio By Industry

Industry Group	Number of Plants	Waste Generation in 1000 tons/yr "Typical plant"	Ohio total	Percent of All Wastes
Textiles	25	1.03	26	0.5
Chemicals				
Inorganic	64	30.15	1,930	34.6
Pharmaceuticals	57	0.07	4	0.1
Paints, etc.	103	0.02	2	*
Organic	50	0.41	21	0.4
Explosives	5	0.15	1	*
Petroleum Refining	17	6.52	111	2.0
Rubber	803	0.04	35	0.6
Leather tanning	4	0.64	3	*
Primary metals				
Smelting	118	27.70	3,268	58.6
Fabricated Metal				
Electroplating	249	0.10	26	0.5
Machinery	325	0.03	11	0.2
Electric Machinery				
Electronic Parts	117	0.03	3	0.1
Batteries	17	2.28	39	0.7
All other	6,692	0.02	103	1.8
Total			5,581	100

* = less than 0.01%.

Source: State of Ohio Hazardous Waste Management Plan, Parts I and II, to the State of Ohio Environmental Protection Agency, Battelle Columbus Laboratories, December 1978.

Questions

1. Why do synthetic chemicals tend, on the whole, to pose more of a hazard than naturally occuring chemicals?
2. What are the differences amoung the groups of substances identified as hazardous?
3. Why do we need hazardous waste management facilities in Ohio, even though some other states may not?

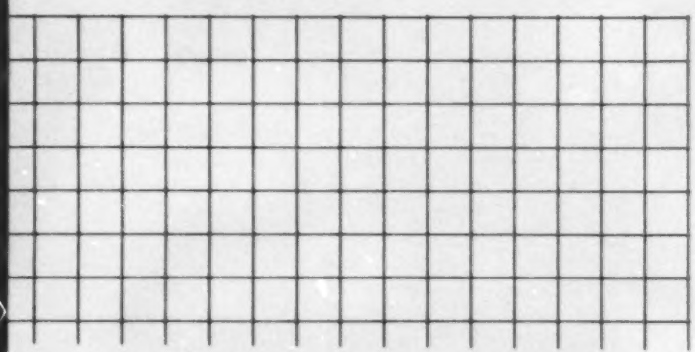


Figure 1: Location of Treatment, Storage, and Disposal Sites in Ohio, by County, as Approved by the Hazardous Waste Facilities Approval Board as of 20 January 1982.

Suggested Readings

Controlling the Risk. 16 mm film, 27 minutes. Columbus, Ohio: Ohio EPA, Public Interest Center, 361 East Broad Street 43215. Free.

Exposure. Newsletter on toxic materials control. Washington, D.C.: Environmental Action Foundation, 724 Dupont Circle Building 20036. $15 annual subscription.

Ground Water: Ohio's Hidden Resource. Audio-visual presentation, 25 minutes. Columbus, Ohio: Ohio Environmental Council, 1500 West Third Avenue 43212. $75 deposit required.

Guide to Ground Water Protection in Southwest Ohio. Columbus, Ohio: Ohio Environmental Council, 1500 West Third Avenue 43212, 1981. $1.50.

Hazardous Waste. Columbus, Ohio: Ohio EPA, Public Interest Center, 361 East Broad Street 43215. Free.

Ohio Toxic Substances Referral Guide. Columbus Ohio: Ohio Environmental Council, 1500 West Third Avenue 43212. 1982. $1.00.

The Toxic Substances Dilemma, A Plan for Citizen Action. Washington, D.C.: The National Wildlife Federation, 1412 Sixteenth Street, N.W. 20036.

and personnel training
system and reporting standards
design and operation of facilities.
3005 (122) Permits for Treatment, Storage, or
Hazardous Wastes. Requires EPA to implement a permit
program to assure adequate regulation of hazardous wastes.
EPA has done so by consolidating RCRA permits with those of
related programs. Programs have either interim status, in which
existing facilities can continue to operate while being upgraded
to required level, or "final" status.
3006 (123.4) Authorized State Hazardous Waste Programs.
States are encouraged to implement hazardous waste programs
consistent with and at least as stringent as the federal program.
States may be granted interim authority for their programs.
States apply to EPA for program approval, describing their
proposed program in detail. The final details of the state
program are determined in negotiations between U.S. EPA and
the lead agency for the state program. In Ohio, the lead agency
in the Ohio EPA
3007 Access Entry. The U.S. EPA and the state agency have
the right to inspect all sites involved with hazardous waste
management, and the records of the program are public record
with the exception of trade secrets.

Framework For Hazardous Waste Management In Ohio

Government at all levels has responsibilities for hazardous waste management (Table 4). The basic framework for the system is set at the federal level and implemented by the state. The fundamental responsibility to protect lives and property within the community, however, rests with the local government, notably the police and fire departments.

Table 4

Functions of Different Levels of Government In Hazardous Waste Management

Federal

Standard-setting and regulation-writing
Research to justify standards and regulations
Inspection of facilities
Approval and oversight of State programs
Enforcement of national minimum standards
Cleanup of spills or abandoned and illegal dumps
Public information

State

Immediate enforcement of hazardous waste regulations
Permitting and inspection of individual facilities
Support for local governments
Administration of the permitting and siting process
Backup disaster protection services, including Emergency Response Team

Local

Fire and police protection
Zoning and land use planning
Municipal services
Immediate response to disasters

Legislation and regulations at both the federal and state levels control the disposition of hazardous materials. But the government has no magic wand to wave over hazardous wastes and make them disappear. We are still learning the best ways to understand and deal with them. They were a relatively unknown problem prior to World War II, and the magnitude of the hazards they posed did not reach deeply into the public consciousness until about 1975.

Media attention on disasters such as Love Canal and the Valley of the Drums has made people afraid. Congress responded to this fear with one of the most complex, far-reaching regulatory programs in the entire federal government. The goal of the program was to create a system within which hazardous wastes could be treated, stored, or disposed of in a way that minimized contact with people and contamination of the environment. In this way, the legitimate fears of people could be overcome, since they better understood that hazardous wastes were being disposed of in an environmentally sound manner that minimized risk to human health.

The Resource Conservation and Recovery Act of 1976

Of the many federal laws that affect hazardous materials, the Resource Conservation and Recovery Act (RCRA) is the keystone to hazardous waste management. RCRA sets forth the framework of a management system that will enable the government to track hazardous wastes from "cradle to grave," using a series of permits, identification numbers, and standard forms. It provides for a definition of hazardous wastes and regulates several classes of actors within the system. These are the generators (companies that

produce hazardous wastes which need to be disposed of), transporters (trucking or other companies that carry hazardous wastes from one facility to another), and so-called T/S/D facilities (facilities that treat, store, or dispose of hazardous wastes). Finally RCRA establishes minimum standards for the operation of a hazardous waste management program by individual states.

RCRA is a complex piece of legislation. But its most complex aspect is the regulatory program it established. Before describing the features of RCRA, we need to point out the relationship between legislation on the one hand and regulation on the other.

A *law* is passed by a legislative body such as the U.S. Congress or the Ohio General Assembly. A law is typically fairly general, and it provides the framework for a program. It recognizes that major programs cannot be produced full-blown in a single step. Rather, government, like the rest of us, needs to learn how best to deal with particular problems, and this takes both time and the opportunity for a dialogue between the responsible arm of government and the other parts of society affected by the program.

RCRA is a general statement. You can get a copy of it by contacting your Congressman (U.S. Capital, Washington, D.C. 20510) and requesting a copy of Public Law 94-580. Alternatively, you can consult the *U.S. Statutes at Large* in your public library. RCRA appears on pp. 2795 - 2841 of Volume 90 of this document. RCRA is also codified in the *United States Code* of laws, which is arranged into a series of "titles." The official reference for RCRA is 42 U.S.C. 6901, *et seq.* That is, RCRA appears in title 42 of the *U.S. Code* as sections 6901 and following. The *U.S. Code* is available at law libraries, university libraries, and large public libraries. This is probably the best source of information about any law, since it is the definitive codification of the law of the land. As such, any amendments to the law that may not be in the copy of the law which you receive from your Congressman will appear in the *U.S. Code*.

A regulation is a rule that is devised by agency staff persons at the direction of a legislative body. It has the force of law, even though the legislature neither issued nor approved the actual wording. Regulations are first **proposed** by a federal agency in a daily publication called the *Federal Register*. Each notice of a proposed rule invites people to comment on the proposal and suggest improvements. Deadlines are given in the announcement for submission of comments to the agency. The agency is required to consider these comments prior to issuing a **final** regulation.

As an example, section 3002 of RCRA requires the administrator of the U.S. EPA to "promulgate regulations identifying such standards, applicable to generators of hazardous wastes . . . , as may be necessary to protect human health and the environment . . ." The act gives the EPA guidelines as to the factors that need to be considered in developing these regulations, but it does not spell out the precise form of the regulation. EPA finally issued the final regulations in 1980, four years after passage of RCRA, in 45 FR 33140 (Volume 45 of the *Federal Register*, beginning on page 33140). Regulations are also catalogued in the *Code of Federal Regulations*, the official listing of regulations paralleling the *U.S. Code* of laws. It too is updated periodically and is divided into "titles" and "sections," with most EPA regulations being in Title 40. The reference for the regulations written under RCRA is 40 CFR 122 *et seq.* and 40 CFR 260 *et seq.*: that is, sections 122 on and 260 on of Title 40. The *Code of Federal Regulations* can be found at most large public libraries.

The major provisions of RCRA regarding hazardous waste management are summarized in Table 5. The 4-digit number in each case is the section of the law; the 3-digit number is the section of Title 40 of the *Code of Federal Regulations*.

Table 5

Summary of RCRA Provisions and EPA Regulations to Implement Them

3001 (261) Identifying and listing what materials constitute hazardous wastes. Lists characteristics of hazardous wastes and gives names of almost 500 specific chemicals which are considered hazardous.

3002 (262) Standards for Generators of Hazardous Wastes. Requires generators to participate in a system that tracks wastes from generation to ultimate disposal. Facilities must have identification numbers. Containers must be appropriate and properly labeled. Hazardous wastes shipped to other sites must be tracked through a manifest which documents the waste's movements.

3003 (263) Standards for Transporters of Hazardous Wastes. Requires transporters to have identification numbers and to comply with the manifest system. Accidental spills must be reported and cleaned up.

3004 (264,5,7) Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF's). Requires TSDF operators to have contingency plans for dealing with emergencies and hazards, adequate security, and personnel training. They must comply with the manifest system and reporting standards. Standards are required for design and operation of facilities.

3005 (122) Permits for Treatment, Storage, or Disposal of Hazardous Wastes. Requires EPA to implement a permit program to assure adequate regulation of hazardous wastes. EPA has done so by consolidating RCRA permits with those of related programs. Programs have either interim status, in which existing facilities can continue to operate while being upgraded to required level, or "final" status.

3006 (123,4) Authorized State Hazardous Waste Programs. States are encouraged to implement hazardous waste programs consistent with and at least as stringent as the federal program. States may be granted interim authority for their programs. States apply to EPA for program approval, describing their proposed program in detail. The final details of the state program are determined in negotiations between U.S. EPA and the lead agency for the state program. In Ohio, the lead agency is the Ohio EPA.

3007 Access Entry. The U.S. EPA and the state agency have the right to inspect all sites involved with hazardous waste management, and the records of the program are public record with the exception of trade secrets.

3008 Compliance Orders. The U.S. EPA or designated state agency can order correction of violations of the program. Violators have the right to a public hearing. Failure to obey an order can lead to fines of up to $25,000 per day. Criminal penalties are specified for transporting or disposing of hazardous wastes without permit or by falsifying records. Fines are up to $25,000 (first offense) or $50,000, and prison terms are from one to two years.

3009 Retention of State Authority. All states may manage a hazardous waste program until RCRA regulations are in force. Thereafter, state programs must be no less stringent than the federal program.

7001 Employee Protection. No employer can fire or otherwise discriminate against an employee who brings about a complaint against his employer under RCRA.

7002 Citizen Suits. Individuals have the right to sue any company or the U.S. EPA for violations in permit conditions or regulations governing hazardous waste management. The Administrator of the U.S. EPA must be given 60 days notice of such suits. The courts may award costs of the litigation to the person bringing the suit.

7003 Imminent Hazard. Regardless of the status of the hazardous waste management program, U.S. EPA can seek an injunction against any person handling hazardous wastes in a way that would create an imminent and substantial danger to public health or the environment.

7004 Petition for Regulation and Public Participation. Any person may petition for new regulations or modification of existing regulations. Full public participation will be required and supported in developing regulations.

Ohio State Legislation Governing Hazardous Waste Management

RCRA encourages states to establish regulatory programs within their own appropriate agencies. RCRA also establishes minimum standards for those state programs. This approach is standard practice for federal environmental legislation and assumes that 1) states know the local situation better than the federal government and 2) state programs can take advantage of local conditions that might allow regulation to be more efficient or effective than a centralized program.

Ohio responded with the Ohio Hazardous Waste Management Acts of 1979 and 1980, which implement RCRA in Ohio. These bills are also known as Senate Bill 266 of the 112th General Assembly and Amended Substitute Senate Bill 269 of the 113th General Assembly. They are also codified as Section 3734 of the *Ohio Revised Code*. The Ohio Code can be found at law libraries, university libraries, and major public libraries.

The legal basis for hazardous waste management in Ohio is complicated. Much of the legislation follows RCRA quite closely, but some portions of the state law establish provisions not required by RCRA. In order to understand how hazardous wastes are managed in this state, we must summarize the legislation upon which the program is based.

Hazardous waste facilities are required to have permits to operate. These permits are rather detailed documents outlining the constraints within which the facility must operate. They are issued by the Hazardous Waste Facilities Approval Board (HWFAB), which oversees the siting process for hazardous waste facilities in Ohio. The board consists of the Director of the Ohio Environmental Protection Agency as chairman, the Director of the Ohio Department of Natural Resources, the Chairman of the Ohio Water Development Authority, and a chemical engineer and a geologist from within the state university system.

To obtain a permit for a new facility, a developer first submits a detailed application to the Ohio EPA, Division of Hazardous Materials Management (Figure 2). The application must include the nature and volumes of wastes to be treated, stored, or disposed of, detailed plans of the proposed facility, and operating plans that demonstrate how the facility will minimize the risk of contamination of air or water, the chances of fire or explosion, and the probability of accidents during transportation. The application must include all supporting engineering, geological, and other documentation.

The application is examined by the staff of the Division of Hazardous Materials Management, which passes it along to HWFAB with an assessment of whether or not the permit is in compliance with appropriate regulations. Ohio EPA then turns over responsibility for final decision-making to HWFAB. Upon receiving the application and Ohio EPA staff analysis, HWFAB must first determine that the application package provides all of the information they need to make a determination. If the application package satisfies HWFAB, the formal permit process can begin.

There are three phases to the HWFAB permitting process. These are 1) the public information phase, 2) the public hearing phase, and 3) the adjudication hearing phase. HWFAB must adhere to some very tight deadlines in phases 2 and 3, and citizens must understand these deadlines and the interrelationships among the phases if they wish to participate in the process.

The public information phase is a procedural matter adopted by HWFAB, rather than a requirement of law. HWFAB members or staff will meet with members of the public to discuss the proposed facility with them and learn more about people's feelings and fears. Oftentimes a facility developer may conduct his own informal meetings in the proposed host community. The staff of the Ohio EPA is also willing to meet with community residents and provide additional information.

A public hearing is required by law, and it is held in the county in which the proposed facility is to be located. Upon receiving the completed application, HWFAB must promptly set the date of a formal

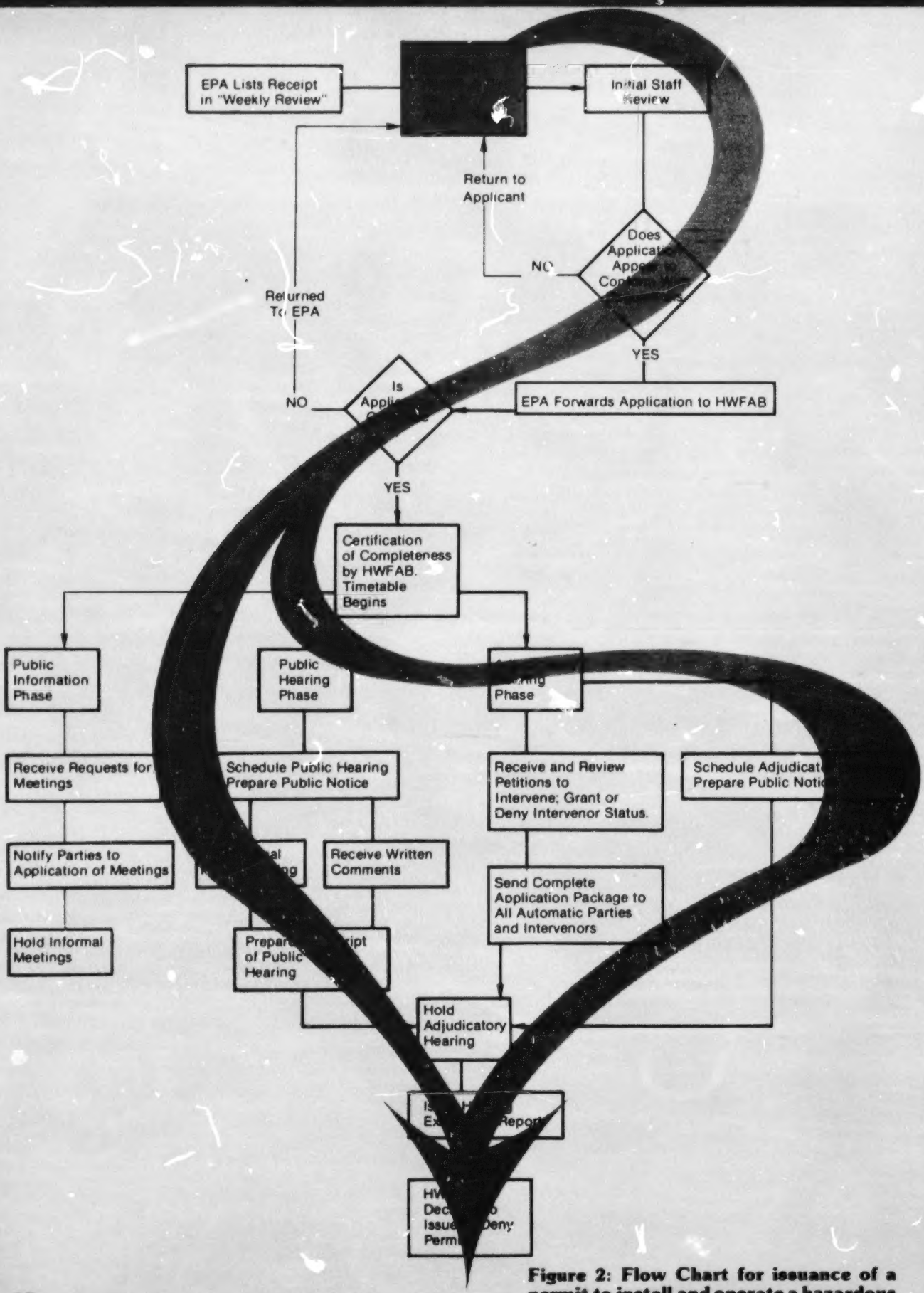

EPA Lists Receipt in "Weekly Review"
Initial Staff Review
Return to Applicant
NO
Returned To EPA
YES
NO
EPA Forwards Application to HWFAB
YES
Certification of Completeness by HWFAB. Timetable Begins
Public Information Phase
Public Hearing Phase
Receive Requests for Meetings
Schedule Public Hearing Prepare Public Notice
Receive and Review Petitions to Intervene; Grant or Deny Intervenor Status.
Notify Parties to Application of Meetings
Receive Written Comments
Send Complete Application Package to All Automatic Parties and Intervenors
Hold Informal Meetings
Hold Adjudicatory Hearing

Figure 2: Flow Chart for issuance of a permit to install and operate a hazardous waste facility in Ohio.

public hearing to take place within 60-90 days. Public notice of this meeting must be made in a general-circulation newspaper serving the prospective host community, including a map of the affected area and a listing of the places where the public can testify at the public hearing. In addition, HWFAB is considering accepting written testimony for a brief period following the hearing.

The adjudication hearing is also required by law, and it is held in Columbus. It is a much more formal proceeding than the public hearing, and it must be scheduled to take place 90-120 days from receipt of the completed application. Its purpose is not to provide a sounding board for the community, but rather to provide HWFAB with the information to make a final determination on whether or not to issue the permit. The rules of evidence are followed in the adjudication hearing, and witnesses are subject to cross-examination.

Participation in the adjudicatory hearing is limited to parties directly affected by the facility. Automatically included are the applicant, Ohio EPA staff, the Board of County Commissioners or County Council of the county in which the facility is to be located, and the Chief Executive Officer of the municipal corporation, if any, in which the facility is to be located. In addition, any other party may petition HWFAB to receive status as an intervenor in the hearing. Petitions must be submitted within 30 days of the public notice of the adjudication hearing. This is almost certain to be prior to the public hearing. Citizens must apply for intervenor status immediately, even though details of the proposed facility may not have been discussed in public.

At the adjudication hearing, HWFAB is required by law to determine 1) the nature and volume of the wastes to be handled at the facility, 2) that hazardus waste regulations will be complied with, and 3) that the proposed facility is designed and can be operated in a way that minimizes risk to public health and to the environment. On this basis, HWFAB can determine that the legal requirements have been met and issue a permit, or they can decline to issue the permit. In either case, they must provide a written explanation of the rationale behind issuance or denial, and all testimony before HWFAB becomes part of the record for any appeals.

Parties adversely affected by a HWFAB decision can appeal the decision to the Franklin County Court of Appeals in Columbus. Notice of appeal must be made within 30 days of receipt of the HWFAB order, and copies of the appeal must be sent to all parties to the adjudication hearing. Evidence in an appeal is limited to information already on record from the adjudication hearing, unless it could not have been ascertained prior to that hearing. The Court can affirm, overrule, or modify the HWFAB order.

The process described above became the law of the State on October 9, 1980. Facilities in operation prior to that date were given a different permit route. They were required to apply for a permit by April 9, 1981. In so doing, they were required to demonstrate that they were in substantial compliance with the statutes and regulations applicable prior to October 9, 1980, and that they would comply with regulations adopted under the new law. HWFAB was required to act on these applications by October 9,1981.

The permit issued by HWFAB is a detailed document outlining the restrictions or constraints on the operation of the facility. It is a legal agreement between the State and the operator intended to insure the safe operation of the facility. The HWFAB permit is the only hazardous waste permit required for operating a hazardous waste facility in Ohio. The law specifies that "No community shall require any additional zoning or other approval, consent, permit, certificate, or other condition for the construction or operation of a hazardous waste facility authorized by a . . . permit issued by HWFAB, nor shall any community adopt or enforce any law, ordinance, or regulation that in any way alters, impairs, or limits the authority granted in the permit issued by HWFAB". This has proven to be one of the most controversial provisions in the law.

Ohio hazardous waste management legislation provides for a system of regulations based on the federal regulations written under RCRA. Like the federal regulations, there are sets applying to generators, transporters, and owner/operators of treatment, storage, and disposal facilities. In general, the regulations must be consistent with and substantially equivalent to the federal regulations.

The Environmental Protection Agency is responsible for enforcement of the law and its associated regulations. If the EPA Director declares that a violation endangers public health (i.e., an emergency exists), he can demand immediate compliance, and the court can award a penalty up to $10,000 per day for each violation. Knowingly violating the laws and regulations governing hazardous waste management is a felony punishable by a fine of $25,000 plus two years imprisonment. A fine of $50,000 is levied for the second offense. Each day constitutes a separate offense.

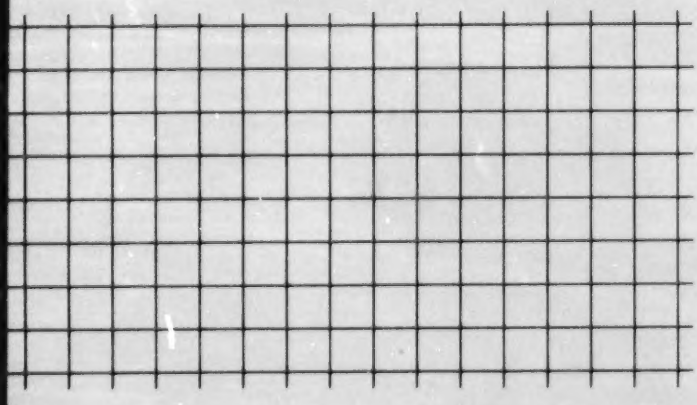
The Division of Hazardous Materials Management of the Ohio EPA is supported by fees levied on facility operators. For disposal sites not located on a waste generator's property, the fee is currently six percent of the disposal charge. For disposal sites located on a generator's property, the fee is $2,000 per year for each facility up to five acres and $400 per additional acre or $5,000 per deep well. Hazardous waste installation and operation permits require an annual fee of $1,500. Permit fees are set at the discretion of the Director of the Ohio EPA.

Other Laws Affecting Hazardous Waste Management

Several other federal laws are also deeply involved with hazardous waste management. The most important is the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly called "Superfund." It is also known as Public Law 96-510, or 42 USC 9601 *et seq.* It provides a $1.6 billion Hazardous Substances Response Fund to assist in cleaning up releases of hazardous materials into the environment, and also to assist in cleaning up abandoned hazardous waste sites. Superfund has provisions for the post-closure and long-term maintenance of abandoned dumps but the U.S. EPA, as of May 1982, has not yet given the states any guidance on how to implement the post-closure fund.

Hazardous waste management is also affected by the Clean Air and Clean Water Acts, the Safe Drinking Water Act, the Toxic Substances Control Act, the Marine Protection, Research, and Sanctuaries Act, the National Environmental Policy Act, the Wild and Scenic Rivers Act, the National Historic Preservation Act, the Land and Water Conservation Act, the Endangered Species Act, the Coastal Zone Management Act, the Fish and Wildlife Coordination Act, the Hazardous Materials Transportation Act, the Federal Insecticide, Fungicide, and Rodenticide Act, and executive orders covering wetland and floodplain development.

All in all, it is now very difficult to carry out the style of operation which gave us Love Canal. Legislation and associated regulations at both state and federal levels require "cradle-to-grave" monitoring of hazardous wastes, so that we can monitor what happens to a given waste from its origin to disposal. Once a waste stream has entered the manifest-controlled system, illegal "midnight dumping" is very difficult.



Questions

1. How do the different levels of government interact in hazardous waste management? Is one more "important" than another?
2. What are the practical differences between treatment, storage, and disposal of hazardous wastes?
3. How do you locate a piece of legislation, using the facilities of your public library? How do you use the *Federal Register* to find the text of a regulation?
4. What is the function of the regulations written under RCRA? Why isn't it enough just to have the law on the books?
5. Is a permit to install and operate a hazardous waste management facility a "license to pollute"? Why not?
6. Does the issuance of a permit guarantee that a hazardous waste facility will not pollute the air and water? Why not?
7. How does the function of the Hazardous Waste Facilities Approval Board differ from that of the Ohio EPA, Division of Hazardous Materials Management?

Suggested Readings

Fundamentals of Transporting Hazardous Wastes. Fundamentals of Transporting Hazardous Materials. Hazardous Materials Handbook. Washington, D.C.: The Operations Council of the American Trucking Association, 1616 Street, N.W. 20036. $3.75 each.

A Hazardous Waste Primer. League of Women Voters Education Fund. Washington, D.C: League of Women Voters of the United States, 1730 M Street, N.W. 20036. Publication #402. $0.75 plus $0.50 shipping.

Questions and Answers on Hazardous Wase Regulations. U.S. Environmental Protection Agency, Office of Water and Waste Management, SW-853. Washington, D.C.: U.S. EPA, 401 M Street, S.W. 20460. 1980.

Types of Hazardous Waste Management

It would be easy to conclude from reports in the media that the primary hazardous waste disposal method in use in the United States is landfilling. Most of the national "horror stories" have been attributed to improperly managed landfills. Consequently, the facilities whose siting has drawn the most attention have likewise been landfills. Actually, there are several different kinds of hazardous waste management facilities. We hear little about some of them because they cause few problems. Different facilities have different functions and they complement each other. Available technology allows for a coordinated hazardous waste management system that takes advantage of the opportunities presented by different kinds of treatment.

Hazardous waste management facilities group themselves naturally into four different types (Table 6): recycling, chemical processing, hazard reduction, and disposal. Ohio regulations, however, classify incineration as a type of treatment technology.

Recycling

Many wastes can be reused after reprocessing. Hazardous wastes include several potentially valuable materials, including acids, caustics, catalysts, metal processing debris, petroleum derivatives, oils, solvents, wood scraps, and sawdust. These wastes tend to be concentrated in certain industries, such as petroleum refining, organic chemicals, pharmaceuticals, and the manufacture of small industrial machinery. The proportion of recyclable wastes produced in these groups is much higher than the average for all industries.

Recycling of hazardous wastes has increased markedly over the last 10 years. Most recycling is "prompt" in that a generating industry recycles and reuses their own wastes. Many companies can find markets for their wastes and sell them or at least give them away and avoid the disposal cost. The most common example is the so-called pickle liquor produced by steel mills. It consists of acid contaminated by iron oxides. It used to be a major pollutant in rivers flowing through steel mill cities. However, it can be used to control phosphorus discharge from municipal wastewater treatment plants, and many steel mills are now taking spent pickle liquor either to these plants or to other industries who use it to neutralize caustic (alkaline) wastes. One steel corporation in Ohio will shortly be recycling over half of its pickle liquor in this way.

Table 6

Types of Hazardous Waste Management Facilities and Services

1. Resource and Materials Recovery
   a. Waste exchange: Information clearinghouse
   b. Waste exchange: Materials broker
2. Chemical Processing and Treatment
   a. Chemical reclamation facility
   b. Aqueous treatment plants
3. Detoxification, Solidification, and Hazard Reduction
4. Disposal
   a. Destruction of flammable molecules (incineration)
   b. Secure landfill
   c. Underground injection

Waste Exchanges

Materials produced in smaller quantities may not have as obvious a market. Recycling them requires a more active mechanism to bring a potential buyer to the waste generator. This is the function of the waste exchange. The first waste exchange began in 1972 in Norway. There are now 22 waste exchanges operating throughout the United States.

A typical industrial waste exchange is a clearinghouse of information. Companies with waste materials provide the exchange with information on the nature and location of those materials. Companies that wish to acquire waste materials list their requirements and locations. Confidentiality is preserved by coding the names of the corporations, rather than listing them explicitly. The clearinghouse generally plays a passive role, publishing a newsletter listing the materials available and/or desired by client companies. It is commonly run by a non-profit organization whose function is to assist in bringing parties together to negotiate the purchase of the materials. It gets a small commission for bringing the buyer and seller together.

Some waste exchanges take a more active role than the information clearinghouse. Rather than simply provide information, they attempt to create a market for waste materials. They help companies producing wastes find ways to process those wastes into salable forms and may actively search out a buyer for those materials. The commission charged for this service is obviously higher than for the information exchange but so is the level of service offered.

The clearinghouse and brokerage approaches to waste exchange are quite different from each other, and both have advantages. As long as the characteristics and potential uses of the waste are relatively straightforward, an information clearinghouse may be sufficient to bring buyer and seller together for their mutual benefit. The more active approach is needed when it is not immediately apparent how to get a potential buyer and seller together. As an example, one large midwestern chemical company had been disposing of a magnesium compound as a waste for over 25 years. A brokerage waste exchange was able to find another chemical company that would buy the waste, clean it up, and use it as a raw material for one of its processes. Both companies saved, one in their disposal costs, the other in purchase of virgin magnesium.

Less than two percent of the national production of hazardous wastes pass through waste exchanges at this time. When hazardous waste regulations become increasingly stringent, however, prompt recycling, waste exchanges and other methods of increasing the level of recycling will become more popular. It is not clear at this time how much of our hazardous waste production will ultimately be recycled. Nor is it clear how much of the recycling will be coordinated by generators themselves, information clearinghouses, or other types of corporations.

Chemical Treatment

Like waste exchanges, chemical processing plants for hazardous wastes are oriented toward recovering value from the waste. Several of these processes are indicated in Table 6. Some are relatively simple; others involve high levels of technology. Some types of chemical processing produce resalable materials; other reduce either the toxicity or the volume of the wastes, with some useful materials as a byproduct.

Chemical Reclamation

Many organic chemicals become wastes because they are contaminated. There may be nothing wrong with the material itself, except for the contamination. This is especially common with solvents and oils. However, the solvents and oils can be regenerated completely in specialized reclamation plants which remove contaminants and produce either a re-refined version of the original material, or a related material with a ready market. For example, oil re-refining adds materials to waste oil so that impurities coagulate and can be filtered out, leaving high quality uncontaminated oil. Solvent re- refining distills contaminated solvents and purifies them to specifications which may be as high as their original, uncontaminated level.

Chemical reclamation depends on well-known processes like those done in thousands of chemical plants across the country. It is not very significant that the raw material is waste or that it is hazardous. The problems associated with re-refining the wastes are similar to those associated with manufacturing them in the first place. Also, reclamation plants produce products of definite specification which may have a high sale value. There is thus an economic incentive to reclaim hazardous wastes if suitable facilities exist. However, reclamation plants produce wastes of their own. The contaminants which prevented the further use of the original wastes are removed, but they do not go away. They may be hazardous or they may be quite benign.

An organic waste reclamation plant typically resembles a small refinery and can easily fit into an urban industrial zone. The most prominent indications of its operation are the arrival and departure of trucks, as well as occasional steam venting from distillation equipment. Reclamation plants may also process materials that are not hazardous wastes. A host community will usually think of the facility in a positive sense as a chemical plant providing employment and not as a waste management facility, whether hazardous waste remanufacture is all or simply a part of its function.

Aqueous Treatment Plants

Many hazardous wastes are dissolved in water. The most common of these are concentrated acids, alkalis, acids mixed with metals, and certain organic materials. Their treatment tends to be oriented to removing the contaminants from the water and returning the water safely to the environment, rather than producing salable products. Plants treating these materials have more in common with standard wastewater treatment facilities than with organic chemical plants.

A typical aqueous treatment plant can accept several different kinds of wastes. These are segregated in different holding areas to insure treatment appropriate to the waste. Some wastes may be mixed to allow beneficial chemical reactions to take place. For example, mixing acids and bases can neutralize both. Strong oxidizing agents can be mixed with strong reducing agents to produce a mixture of much lower chemical reactivity. Treatment chemicals are added to wastes to cause metals or other dissolved materials to settle out to the bottom where they can be removed from solution. Some organic materials can be oxidized; others can be removed by specialized treatment. Others can be removed from solution by biological treatment, much as in a traditional sewage treatment plant.

The treated water is released into surface waters or into the sewer system, and the material that rendered it hazardous is removed as a sludge. Few plants treating hazardous wastewaters are intended to reclaim hazardous materials. If anything is reclaimed, it is likely to be the water rather than the contaminants. Many industrial plants find it economically beneficial to treat their water to a degree so that they can reuse it. This is cheaper than treating it to meet the pretreatment requirements of their municipal sewage authority, discharging it into the sewer and paying sewage charges, and then purchasing the same amount of city water.

In some cases, hazardous contaminants can be reclaimed and reused. This is likely to become increasingly common, especially when the wastes contain expensive heavy metals such as chromium and cadmium. For example, the electroplating industry in Cleveland is currently looking into the feasibility of establishing a centralized integrated treatment facility to treat the wastes from electroplating shops in the Cleveland area. This plant would purify the water so that it can be discharged into the sewer system, reclaim substantial amounts of heavy metals for reuse by area electroplaters, and concentrate the remaining wastes so that they can be disposed of most economically.

Aqueous treatment plants produce sludges. The sludge commonly has little value, if any, and there is seldom an alternative to disposal. It may be in toxicity than the original wastewater or the hazardous materials may be more concentrated in the sludge than in the original solution. In either case, a dewatered sludge is a solid that is inherently safer to transport than the original contaminated water.

Detoxification, Solidification, Reduction of Hazards

Regardless of other treatment options available, it is not economically feasible to recover or reclaim many hazardous materials. Disposal of some sort is necessary. However, it is often possible to reduce the hazards posed by wastes prior to disposal.

Sludges containing a lot of water often need simply to be dewatered and ground into small pieces of uniform size in order to be rendered suitable for landfilling. Other materials need additives such as fly ash, clay, or similar low-priced aggregates. Lime is added to some wastes to make them less acidic and to decrease the solubility of heavy metals.

Other wastes need more powerful solidification techniques, such as incorporating them into a stable cement material or encapsulating them in a sponge-like plastic. Certain wastes can be blended with resins in order to create a solid plastic material. The most permanent form of encapsulation is in combination with silica to form a glass or ceramic material with high structural integrity and with minimal potential for leaching. This last option is most useful for very dangerous or radioactive materials.

The purpose of stabilization and solidification is to minimize the mobility of landfilled wastes. In general, a stabilized waste is semi-solid with a consistency approaching that of thick mud. Its structural integrity is sufficient that it would not be expected to flow through a landfill if its drum ruptured. Metals are bound chemically to minimize their hazards even under worst- case conditions. Solidification is more complete, so that certain organic constituents are immobilized in addition to metals. Encapsulation in cement, plastic, and glass provide even greater resistance to leaching.

Over 40 different commercial processes for solidification are now available in the United States. None of them is suitable for all hazardous waste. However, all hazardous waste can be solidified satisfactorily using at least one of these processes. Fluid wastes (a liquid or gas) need not be landfilled. Indeed one of the simplest ways to reduce the potential for public health and environmental damage from landfills would be to require all hazardous materials entering a secure landfill to be solidified prior to disposal. This is fully feasible under existing technology, and regulations to this effect govern land disposal in Ohio.

Disposal

Disposal is the end of the hazardous waste management process. When wastes are treated as much as they will be treated, it is necessary to do something with what is left. Even if our hazardous waste management system maximized recycling and reclamation, there would still be sludges and other wastes or by-products of the treatment process that need to be disposed of.

There are three main ultimate disposal technologies for hazardous wastes, as well as some less important ones that may be used in certain instances. These are incineration, secure landfill, and underground injection. Incineration destroys hazardous organic molecules by burning them at very high temperatures. In secure landfills, wastes are buried under conditions which minimize the amount of leaching through the landfill.

Underground injection is a process in which waste materials are injected at great pressures into geological strata deep in the earth, presumably under conditions which make it all but impossible for the hazardous materials to come in contact either with the surface or with important aquifers.

For various reasons, public concern about hazardous waste management techniques has focused on disposal technologies, especially landfills. Disposal is seen as very different from the other technologies discussed so far. On the whole, waste treatment plants are seen as legitimate chemical operations, while waste disposal facilities, especially landfills, are perceived as incipient Love Canals. Industrial cities that would find no objection to a chemical recovery or aqueous treatment plant often want nothing to do with a secure landfill.

Incineration

Incinerators used to be the most common way of getting rid of trash or solid wastes. They were relatively cheap to operate, but they emitted tremendous amounts of particulate material out the smokestack.

Properly designed and operated hazardous waste incinerators are a very different kind of device from the old-fashioned municipal or apartment-house incinerator. They can be so successful in eliminating hazardous wastes rapidly that for regulatory purposes, they are considered a type of treatment, even though their purpose is disposal. Temperatures are maintained at very high levels, so that even the most stable organic molecules are broken down into simple molecules like carbon dioxide, water, and nitrogen. Most hazardous waste incinerators burn waste at temperatures above 2000° F. Non- combustible materials remain as an ash at the base of the combustion chamber.

The heat of combustion may drive off gases or very light particles with some hazardous characteristics. These must be removed either in an electrostatic precipitator or in a scrubber. As an example, hydrogen chloride (HCl) is produced when any chlorinated hydrocarbon is burned (e.g., certain pesticides, PCB's, and so forth). It forms hydrochloric acid when it dissolves in water. It is thus very corrosive and must be scrubbed before it enters the environment. On the other hand, metals present in the material, either as constituents or as contaminants, do not burn. They may be carried off with the flue gases, where they are removed by the scrubber, or they remain in the ash to be landfilled.

Some intermediate combustion products may leave the combustion chamber before they are completely destroyed. These gases need to be broken down still further before they can safely be discharged into the atmosphere. For this reason, hazardous waste incinerators typically have an afterburner adjacent to the main combustion chamber. In the afterburner, the exhaust gases are mixed with fuel and burned at very high temperatures. This two-stage destruction assures maximum detoxification of the waste. The electrostatic precipitator and scrubbers follow in the flue gas path.

Incineration is very well suited to dealing with highly toxic or combustible organic materials. and a well run incinerator can destroy more than 99 percent of the total organic components of a hazardous waste. The proportion of material released from a well run incinerator into the environment can be very much less than from any other form of ultimate disposal. However, incineration is suitable only for materials that can be destroyed under high-heat conditions, and this is not true of all hazardous wastes.

Secure Landfill

A secure landfill is a carefully engineered burial site designed to accept hazardous wastes and prevent their escape into the environment. Underneath the wastes lie layers of compacted clay and other low permeability materials such as synthetic liners, which are designed to prevent polluted water from reaching the water table.

Above these layers is a leachate collection system designed to collect any liquid which does accumulate in the landfill and allow it to be pumped out quickly and efficiently. The whole landfill is covered over with a compacted clay cap designed to prevent water from entering the part of the landfill that contains the hazardous materials.

The impermeability of the cap and the foundation underlying the landfill are the keys to minimizing releases of hazardous materials into the environment. If water could percolate freely through the landfill, it would pick up and transport wastes as it came in contact with them. This phenomenon is called leaching. An impermeable cap overlying the storage cells minimizes the amount of water than can enter the landfill after closure. Likewise, the impermeable foundation is designed to prevent contaminated water from

flowing through the soil into the groundwater system. Instead, it can be channelled to the leachate collection system and removed.

A secure landfill is very different from the more familiar sanitary landfill which accepts domestic garbage. In the latter, the garbage breaks down anaerobically within the landfill. After a period of time, the remainder of the wastes consists of refractory organic materials such as are found in soils.

In a secure landfill, on the other hand, wastes are deliberately implaced in a way that minimizes their changes through time. They are solid or semi-solid to begin with, and they are enclosed in steel drums. Clay is placed between drums as the storage cell is filled, so that the wastes and the clay packed between drums will retain the cell's structural integrity even if the drums break down. Proper closure minimizes entry of water into the landfill and the wastes do not decompose into materials normally found in the soil. If wastes do break down, and if the landfill does settle, then it is due to an engineering failure in the landfill design and closure.

Underground Injection

Underground injection is the disposal of hazardous materials into very deep wells that extend into permeable materials well below the level at which potable ground water is found, and which are separated from usable ground water aquifers by thick impermeable strata. This approach has been used for many years to dispose of oil-well brines and other wastes. It is a relatively inexpensive way to get rid of hazardous waste.

No form of land disposal puts hazardous wastes more out of society's reach. This has advantages and disadvantages. On the positive side, a well operated injection well can effectively remove wastes from contact with the environment. On the other hand, its it very difficult to respond to a problem and remove the contaminated materials for redisposal. The kind of clean-up that was carried out at Love Canal and in most other landfill disasters is not feasible for a deep well injection site. It would be difficult, if not impossible, to remove all of the material from the well if this should be desirable for any reason. Moreover, should there be contamination of aquifers or other problems associated with an underground injection well, it is difficult to assess the nature of the problem and even more difficult to do anything about it.

Questions

1. What types of hazardous waste management facilities can be appropriate for a densely settled urban area?
2. How do you rank the desirability of hazardous waste facilities? Could you accept any in your community?
3. Is it possible to reduce land disposal of hazardous wastes to zero? If you feel it is possible, what kind of a system would have to exist in Ohio in order to make it happen?
4. What are the strengths and weaknesses of each major facility type?
5. What facility types do you feel are absolutely unacceptable in your community? What facility types are acceptable? Why do you feel this way?

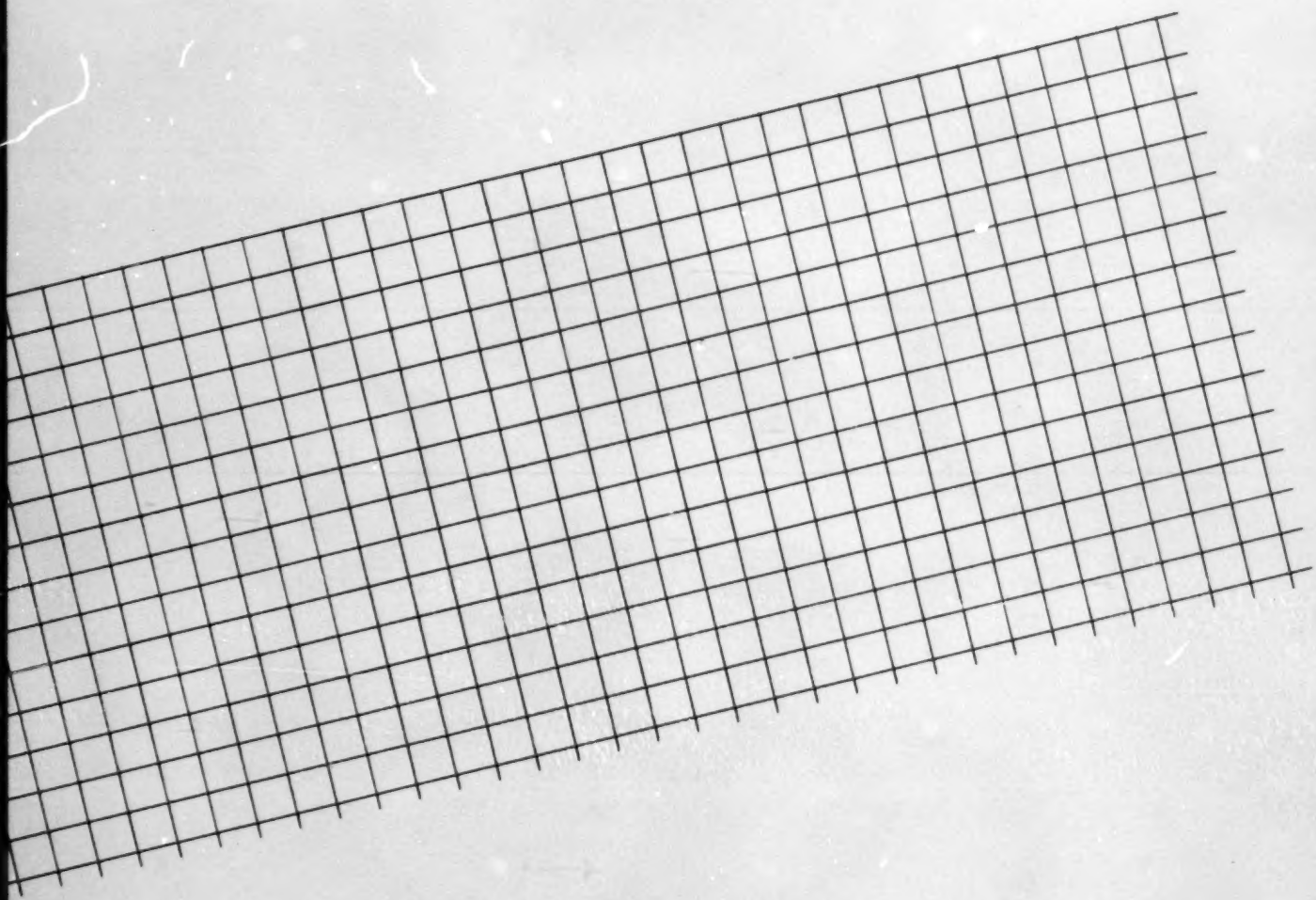
Suggested Readings

Alternatives to the Land Disposal of Hazardous Wastes, An Assessment for California. Toxic Waste Assessment Group, Governor's Office of Appropriate Technology. Sacramento, CA: Office of Appropriate Technology, Publications and Information, 1600 Ninth Street 95814. 1981.

Hazardous Waste Incineration and Gaseous Waste Pollution Control. Air Pollution Control Association. Proceedings of the 72nd Annual Meeting, 1979.

"Methods and Systems Currently Available for the Safe Management of Chemical Wastes," by Lyse D. Helsing. *Chemical Times and Trends,* April, 1980.

Toxic and Hazardous Waste Disposal. Vol. 4. New and Promising Ultimate Disposal Options. Ann Arbor, Michigan: Ann Arbor Science Publishers, 1980.



Citizen Involvement In The Permitting And Siting Process

Few environmental matters receiving public debate in Ohio have the technical complexities and oftentimes the strident overtones as the expected siting of a hazardous waste facility. Such a proposal can hasten alliances between divergent groups and always transcends political or partisan differences.

A common citizen reaction upon learning of a proposed facility is, "How can this be stopped?" Few citizens try to solicit these facilities for their community. People are, at best, skeptical of these facilities. This prevalent attitude has come to be known as the NIMBY, or Not In My Back Yard, syndrome.

Citizens do have specific rights according to laws governing hazardous waste management. There are flaws and it is not always easy for citizens to influence the permitting and siting process. However, well-defined routes for formal citizen input into the process do exist, as well as informal ways by which citizens may effectively obtain responses to their concerns.

The Information Gathering Stage

In almost every case, the first formal notification of a proposed site is the completed permit application. Rumor of a proposed site may filter through a community but this information is commonly incomplete and may also be incorrect.

When the Ohio EPA receives a permit application in the areas of water and air pollution control, notices of the application are placed in the publication, *Ohio EPA Weekly Review*. This is a listing of all legal documents received and issued by Ohio EPA. The Ohio EPA, Division of Hazardous Materials Management is in the process of developing a similar procedure for notification for permit applications. The Hazardous Waste Facility Approval Board (HWFAB) has agreed to publish permits under their review in the *Weekly Review*.

The annual subscription fee for the publication is $70.00. If you cannot afford a subscription, your local county library may have a copy. This publication is one of the best ways available to keep up to date on possible hazardous waste permits in your area. Those interested in following the development of a facility should receive it. If possible, someone should have the responsibility of regularly reading the *Weekly Review*.

A notice in the *Weekly Review* will provide preliminary information about a proposed facility. The permit application and all supporting information, except for trade secrets, are public record. They are on file at Ohio EPA district offices. You can go to these offices and study the application and supporting documents. You can also talk with the Ohio EPA staff at the district office to find out further information on the company proposing the site and about the site itself.

You must be aware of some very short deadlines set by law. This is especially important if more information is available after the permit application is filed. The HWFAB must set a public hearing within 60 to 90 days of receipt of a complete application from Ohio EPA and the adjudicatory hearing must be held within 90 to 120 days. Citizens need to be aware of the dates of both of these hearings.

The public hearing is the only official forum during the entire siting process where citizens are guaranteed an opportunity to present their concerns. The adjudicatory hearing, on the other hand, is the time when formal evidence is taken by HWFAB as the basis for their decision on whether

or not to issue the permit. If your group wishes to be an intervenor at the adjudicatory hearing, you must petition HWFAB for such status within 30 days of the announcement of the adjudicatory hearing. Remember, these deadlines are set in the state's hazardous waste management law. They will be adhered to and will consequently not leave much time to prepare a presentation for those who have not followed the process in detail.

An effective presentation will require you to educate yourselves quickly and efficiently about the company, the proposed facility, and the site. These factors are interrelated, but they involve different sorts of information, which you must obtain from different sources.

The Company

One of the most important elements in discerning the suitability of a facility is the record of the company proposing the facility. This point is one that is least likely to be raised by formal agency review. Community fears can be allayed if the proposed facility owner builds and fosters trust in his committment to an environmentally sound facility. If the permit is granted and the facility built, will the community trust the operator to function in conformance with the permit specifications and to ensure that hazardous releases into the environment are minimized? Is the company willing to recognize and try to deal with the community's concerns?

A great deal of information can be gathered about the company in question. Formal sources of information include annual reports to stockholders and so-called 10-K reports to the Securities and Exchange Commission (SEC). These will give you background information on the companies and let you assess how significant the operation in your community is to them. Annual reports can be obtained by contacting the company. Annual reports of area corporations are likely to be in major public libraries. You can obtain them in person at corporate offices. 10-K reports are available from SEC offices in Chicago or Washington. You may also wish to contact the company directly.

Financial information about corporations can be obtained from various reporting services, such as Moody's, Dun & Bradstreet, and Standard & Poor's. In addition to financial information, these services provide names and addresses of key executives in each corporation, in case you also wish to contact them directly. Most public libraries subscribe to one or more of these services. Talk with your reference librarian as to what services they have and which ones will give you the information you need.

Your main interest is the prospective operator's environmental record. Most especially, what is his record in operating hazardous waste facilities? The information sources listed above should give you a good idea of the company's scope, areas of operation, and how many hazardous waste sites it operates. You can locate the addresses of other facilities owned or operated by the corporation in question by requesting a computer printout of facilities with RCRA identification numbers. The U.S. EPA, Region V, in Chicago, can provide details. You may be able to work with an office of U.S. EPA or Ohio EPA in your area to get the information you need, or you may have to contact U.S. EPA headquarters in Washington, D.C. directly with a Freedom of Information Act request. Figure 3 shows a sample Freedom of Information Act request letter.

You will receive a listing of facilities in several areas. You will now be able to limit your inquiry of the company's environmental compliance record to a select group of facilities. By gaining an historical perspective on the compliance record, you will have a better understanding of the company's committment to meeting their legal environmental obligations. Your first stop for this information should be the Ohio EPA and then the U.S. EPA, Region V in Chicago. They both keep compliance records in the areas of air, water, and land pollution control. These figures are a matter of public record. A profile of the company's compliance can only be obtained by collecting the information from each program office separately.

A more informal way of obtaining information on a company's compliance history is through contact with environmental public interest organizations. Some of these groups have been monitoring compliance with environmental laws for years and might be able to offer a further insight into how successful the company in question has been in meeting environmental standards. The Ohio Environmental Council's *Ohio Environmental Resource Directory* can be an extremely valuable tool when trying to contact other organizations around the state. Some of these organizations are mentioned on the page of organizational resources found at the close of this publication.

The Site

The information on a site can begin to be gathered as soon as its location is known. This will include information about the topography, soils, and subsurface geology from sources available in university and many public libraries.

Topographic maps showing elevations, drainage patterns, highways, and other surface details are published by the U.S. Geological Survey. These are widely available. One source is the Ohio Department of Natural Resources, Division of Geological Survey, Fountain Square, Building B, Columbus, Ohio 43224; (614)265-6605.

Soil surveys have been conducted throughout much of Ohio. The Soil Conservation Service and the Ohio Department of Natural Resources have detailed information on materials at the surface. To obtain this information, contact the Soil Conservation Service in your county and request

information on what soil surveys have been made of the proposed site and how suitable the soil is for building a facility on the site. The county Soil Conservation Service office is listed in the telephone book under U.S. Government, Department of Agriculture.

The Ohio Division of Geological Survey, Ohio Department of Natural Resources has published geological investigations for many of Ohio's counties. Coverage is not complete, however, and your local public library may not have all of these references. They can be purchased from the Division of Geological Survey and are available at major public libraries.

Some of the information from these sources is quite technical. You will need to contact a geologist, civil engineer, and/or soil scientist to interpret the information for you. They will need to understand the geological framework for the facility as completely as possible, as early as possible, and be able to take time to explain their findings to you in meaningful terms.

Once the permit application has been filed, it will be easier to obtain information. Background data supporting the application will be public record and can be studied at the appropriate Ohio EPA district office. If you care to study the permit, it is advisable to notify the Ohio EPA and arrange a convenient time to study the material.

Some important questions to consider when examining site specific information are: Is the sub-surface geology appropriate for the proposed site? How deep is the water table in the area? How permeable are the clays in the area? How many soil borings were made? Are they sufficient? Are there drinking water wells in the vicinity? How near are surface waters? What site limitations does the application admit? If an incinerator is proposed, what will the emissions be, how will they be monitored, what pollutants will be monitored and how often will they be monitored? Do plans call for disposal of scrubber wast. on site?

Your name
Your address
City, State, Zip
Date

Freedom of Information Officer
A-101
U.S. Environmental Protection Agency
401 M Street, S.W.
Washington, D.C. 20460

Dear Sir:

Under the provisions of the Freedom of Information Act (5 U.S.C. 552), I am requesting access to a computer printout that will contain all facilities owned or operated by _____ (company's name) and for which a RCRA indentification number has been issued.

At a minimum, this printout should include the name of the facility (short form), its location by city, county, and state, and whether it is a generator, transporter, and/or treatment, storage, or disposal facility.

If there are any fees for searching for or providing the records I have requested, please inform me prior to filling my request.

I am requesting this information as a member of a group of concerned citizens (name of organization, if you have one), who would like to respond as constructively as possible to a proposed hazardous waste facility to be constructed and operated by this corporation. As you know, the Act permits you to reduce or waive fees when releasing information that is "primarily benefiting the public." I believe that this request fits into that category, and I therefore ask that you waive any fees.

I would appreciate your handling this request as quickly as possible and look forward to hearing from you within 10 days, as stipulated by the law.

Sincerely,

Your Name
Organization and office, if any

Figure 3: A Sample Freedom of Information Act Request. It should be adapted to your own needs.

The Facility

The Ohio EPA analysis of the permit application will concentrate on the detailed engineering plans as presented by the developer. If possible, get assistance from engineers and related scientists to ensure that the agency's analysis was thorough and accurate. Safety factors and margins of error in the facility design plans should be checked as being appropriate for the site's geology and hydrology.

It is not feasible for Ohio EPA to constantly maintain enforcement personnel at every treatment, storage, and disposal facility in the state. With this in mind, facility plans should be examined with an eye for what mechanisms are available for responding to a mishap, be it a judgmental error or a design flaw. Try to determine what problems might exist after construction. How well will the operators be trained to recognize and respond to accidents? Are back-up systems sufficient to contain spills, leaks, and other problems that could occur even in the best operated facility?

Other Considerations

If at all possible, legal counsel should be obtained. Some lawyers may be able to donate their services. Cross checking legal requirements with the permit application can be time consuming and difficult if you are not sure what to look for. Legal advice can help in this respect as well as in filing for intervenor status at the adjudication hearing and in following the permit through the Ohio EPA and HWFAB.

By September 1982, the Ohio EPA, Division of Hazardous Materials Management, Permits and Manifest Records Section should have available a computerized comprehensive hazardous waste data management system to retrieve information on a very wide array of factors affecting the management of hazardous waste in Ohio.

Although not limited to the following capabilities, the system will be able to generate:

1) periodic reports on all treatment, storage, and disposal facility permit applications, their review and permit issuance status and list of permitted wastes;

2) periodic reports on waste generation, source, amount, and location;

3) ad hoc reports available at cost to the public and containing specific information on certain permitted industries (retrieveable by Standard Industrial Code numbers), geographic lists, and more;

4) compliance report reminder letters such as those concerning ground water monitoring requirements; and

5) delinquent disposal fee or permit fee warning letters.

This comprehensive information system should assist the state and industry in managing hazardous waste more effectively. Interested citizens will be able to use this system to assess a company's hazardous waste compliance record, the ability of a proposed site to receive wastes generated in a community, what facilities are handling what types of wastes and where they originate. The system will also aid citizens in understanding hazardous waste management in general.

The Action Phase

If you have gone this far, you have committed yourself to being involved in the permitting and siting process and are ready to suggest improvements. After conducting your research and compiling all of the information, you need to prepare to present it in a way that will be most advantageous.

The law guarantees at least one avenue of direct participation - the public hearing. Beyond the public hearing, there are three other factors that must be considered because in varying degrees, they may have a direct bearing on the ultimate outcome of the hazardous waste management decision in question. They are media coverage, community and political pressure, and direct discussions with the prospective owner or operator.

The Public Hearing

The public hearing is a forum in which all citizens can express their views on a particular permit application. The format may vary somewhat, depending on who is holding the hearing and the level of controversy associated with the particular permit application. Some hearings will generate little or no public attention while others may get extensive media coverage. The hearing will provide a prime setting to present your views to the public through the media. You should not be surprised if the media takes an interest in your statement.

State law guarantees the right to appear and speak at the public hearing. Federal regulations guarantee that testimony will be transcribed and incorporated into the official record of the permitting process. You will no doubt testify along with the applicant and others who may have varying interests. A fairly formal atmosphere can be expected. A hearing examiner will preside over the hearing with the principal responsibility of seeing that it runs smoothly with as much information presented as quickly as possible. You will be able to deliver testimony without the feeling of being interrogated. Hearing examiners do not cross-examine those who testify.

Almost anyone speaking at a hearing has an outline or strategy that is used to make their message more effective. Statements should include the facts and the scientific premise upon which you base your concerns as well as an expression of the sentiment of your community and those you may represent.

You must remember that HWFAB may not issue

the permit unless it determines the following points;

o The nature and volume of the waste to be treated, stored, or disposed of at the facility;

o That the facility complies with the regulations governing hazardous waste facilities of its type in Ohio;

o That the facility represents the minimum adverse environmental impact, considering the state of available technology and the nature and economics of various alternatives, and other pertinent considerations;

o That the facility represents the minimum risk of 1) contamination of surface and ground water by leachate and runoff, 2) fires or explosions from improper operating methods, and 3) accident during transport of wastes to the facility.

Media Interest

Newspapers and the broadcast media usually rely on outside sources to supply them with newsworthy information. In order to be newsworthy, information must be presented as factual, interesting, and timely. Last week's news or even yesterday's news may not make the papers today. You can provide information in several forms.

Common methods of communicating to the public through the media are by letters to the editor, press releases, press conferences, talk shows, panel discussions, and public service announcements. Directions on how to use each of these media tools are given later in this publication.

One of the most important keys for working with the media is establishing credibility and a friendly working relationship with reporters. In order to be considered as a viable source of information, you need to be knowledgeable and present factual material. This will prove you to be as competent as others speaking on the subject.

Daily newspapers often have reporters assigned to an environmental beat whereas smaller community weekly papers may have a single editor who does all of their reporting. Radio stations usually have a relatively small news department and television stations use assignment editors to send crews to cover a particular story. By knowing and understanding how your local media outlets operate, you will be better able to communicate your hazardous waste concerns to the public.

Community and Political Support

The support of elected officials in coalition with a wide spectrum of community interests is a valuable asset for establishing credibility and effectiveness. Elected officials are in office to represent their constituents and they do respond to community-wide support of a position. Remember that county commissioners and the mayor have automatic standing in the adjudicatory hearing, even if you are not granted intervenor status. You may find it useful to assist local officals by providing technical information as they follow the permitting process. Establishing a working relationship with local elected officials can be to your benefit.

Direct Discussions with the Prospective Owner/Operator

One of the most unfortunate aspects of the current state law is that the short time deadlnes leave citizens little time to do more than organize and prepare for the public hearing. They may feel there is no choice other than to complain as loudly as possible and that the only acceptable outcome is for the facility not to be built. However, there are times when other approaches better serve the community.

The HWFAB has under consideration regulations that will require developers to consider the community's needs explicitly. These regulations have not been adopted at this time, however, so that their final form is not yet clear. In the meantime, it is useful to note that new hazardous waste facilities sited in other states since the adoption of RCRA have often involved a creative interaction between the facility operator and the host community. This is something that can occur in Ohio. Many people -- including some within the hazardous waste industry -- feel that no facility can be sited without a level of sensitivity to community needs and feelings that few companies have shown in the past.

The key to the siting problem is trust. If the developer can build a feeling of trust within the community, he will find it much easier to get through the siting process than if he relies on the features of the law which appear to minimize the opportunities for citizen input. It is easy to build opposition to an unresponsive developer who acts as though he wishes the host community would disappear.

On the other hand, many community concerns can be allayed by a conscientious, responsive developer. If the community and the developer take the time and trouble to establish a relationship of mutual trust and respect, it is often possible for both to gain from the siting process.

Even under the best of circumstances, hazardous waste facility developers and communities commonly begin as adversaries and develop a working relationship through negotiation. At the beginning, it may be difficult to remember that the interests of the two sides may not be mutually exclusive. Negotiating can provide ways of identifying a consensus position and meeting joint needs. Neither the community nor the developer gets everything it wants, but both gain something that might not have been possible with a solution imposed by a court, HWFAB, or another outside party.

What the developer gets is clear. The facility is sited, and at least some level of support and

acceptance from the community is assured. The developer gets an assurance that he is unlikely to be shut down if he operates his facility in a responsible way. He is spared a lengthy, costly court fight (which he may lose), and he can proceed with some assurance that his investment in planning is likely to pay off in an operating facility. Any of these would probably make it worthwhile to invest some time in trying to establish a dialogue among all interested parties. Achieving them all with minimal legal hassle is worth quite a lot.

Community gains are more variable, since the needs of each host community are different. Nevertheless, the potential gains to communities are real and can typically be described as compensation, mitigation, or institution-building.

Mitigation is a general term referring to the measures used to minimize or deal with any real or potential negative impact from a proposed facility. Such measures can include facility redesign, a change in operating procedures or management practices, and the use of outside monitoring services to ensure that certain standards are met.

For example, in one hazardous waste landfill in Missouri the size of the landfill was decreased and the trench design was changed to segregate wastes better. These changes satisfied both the host community and the Missouri Department of Natural Resources. The landfill is now in operation.

In the same way, Monsanto negotiated with the New Jersey Department of Environmental Protection to provide a thicker earthen liner for a landfill than was originally proposed. Wes-Con Industries, Inc., of Idaho, began operating a hazardous waste disposal facility which caused local residents to fear fires and explosions in the containment silos. Wes-Con changed their operating procedures to reduce this risk and then underscored their commitment to minimize fire and explosion by signing a consent decree wherein they would shut the facility down permanently if fire or explosion occurred. Allied Chemical Company agreed with a Maryland community to adjust hauling hours to their hazardous waste landfill and to cover their trucks to prevent blowing toxic dust. Public agencies were also allowed a greater voice in facility management.

Compensation makes no attempt to remove or alleviate risks or problems presented by the existence of a facility, although it can be combined with measures that do. Rather, it represents a payment designed to offset costs which the community must bear by having the facility in its midst. Some of these are direct costs to compensate for damage which is manifestly related to the presence and operation of the facilities, or they may be indirect payments to compensate for the intangible costs which generally accompany such facilities. Direct costs include frequency of road repairs, extra requirements for water treatment, wastewater treatment, and demands on the surfaces and infra-structure offered by the municipality. Indirect compensation is generally related to public perception of reduction in property value as a result of hazardous waste management facility construction.

Compensation for the direct costs might involve upgrading of water treatment facilities, training for police and/or fire departments. Indirect compensation would include provision of park land, community centers, or school athletic facilities. As an example, Wes-Con donated salvage from its site to the local municipality, loaned mechanical equipment to local farmers, allowed the town to use the company's fire engine and ran hazardous waste first aid classes for local doctors and residents.

When Boston Edison built its first nuclear power plant in Plymouth, Massachusetts, it donated a $300,000 recreation center to the town and provided access and public foot bridges to the breakwaters controlling plant water flow, as well as rest rooms and public shelters to use on the beach. In other power plant siting cases, utilities have guaranteed land value to adjacent land owners. Should an owner decide to sell the property, the utility will pay the difference between the actual price and the full market value.

None of these devices is directly related to the risks posed by the facility in question. None of them will make operation of the plant safer. All of them, however, represent creative ways of addressing real, if intangible, problems which arise when controversial facilities are placed in a community.

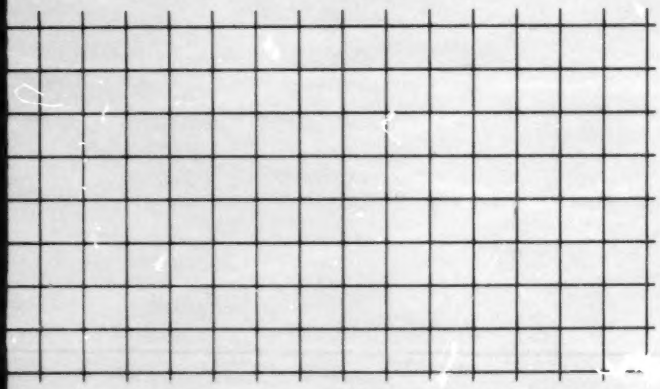
As a general rule, mitigation is preferable to compensation. If there is a choice between lessening a risk and compensating a community for accepting the risk, the former should be done first. Some compensation may still be necessary, but in the long term, it is in the best interests of both the community and the developer to keep the risks as low as possible. It should also be noted that compensation is not a bribe. It is an incentive that is not secret and "under-the-table," as bribes are. It is a well thought-out offer made with full public knowledge and in an honest attempt to offset real costs with real benefits. Its purpose is to make available a tradeoff in which the community can get something of value in exchange for bearing certain costs for the benefit of the State as a whole.

A third type of incentive to a community to accept a hazardous waste facility is *institution-building*. This is neither mitigation nor compensation, but rather creation of institutions designed to increase the community's understanding and/or self-interest in the facility's operation.

Most communities are afraid of hazardous waste management facilities. Their fears could be assuaged in many cases by having "eyes and ears" in the facility. This might mean monitoring of leachate-collection systems or monitoring wells by

independent laboratories who would report to the community as well as to the operator. It may mean having an ombudsman hired by the community with constant legal access to the facility. It might mean having one or more employees of the facility officially recognized by the operator as the community's information-gathering arm. An ombudsman could be paid out of tax funds or out of fees collected by the community on material entering the facility. The employee information gatherer would occupy a position with regard to the community very similar to that which a union shop steward occupies for his union. Alternatively, the union's safety committee for the facility can be recognized by the community as its "eyes and ears."

These are not unusual arrangements. Wes-Con agreed to post a $75,000 bond to guarantee that hazardous wastes would not leach into a local lake, and to pay for monitoring the creek adjacent to their facility by an independent laboratory. They also created a local corporation with local owners to operate the hazardous waste facility.



Questions

1. Why do you need to be organized in order to participate effectively in response to a hazardous waste facility permit application?
2. What information is available to you to prepare for a public hearing or for negotiations with a facility developer? How do you get that information?
3. What deadlines must you remember in order to be most effective?
4. Why isn't it enough to know that a facility design has no technical flaws?
5. What can you hope to get out of the public hearing or an adjudicatory hearing?
6. What can be done if you are not granted intervenor status in the adjudicatory hearing?
7. How do you build a positive relationship with the media? Why should you do so?

Suggested Readings

Anatomy of a Hearing. League of Women Voters Education Fund. Washington, D.C.: League of Women Voters of the United States, 1730 M Street, N.W. 20036. 1972. Publication #108. $0.35, plus $0.50 shipping.

Hazardous Waste Facility Siting. Waste and Toxic Substances Project, Environmental Action Foundation. Washington, D.C.: Environmental Action Foundation, 724 Dupont Circle Building 20036. Free.

A Guide to Obtaining Information from the U.S.G.S., 1981. Alexandria, VA: U.S. Geological Survey, 604 South Pickett Street 22304. Circular 777. Free.

How to Hire a Lawyer: A Consumer's Guide to Good Counsel, by Barry Gallagher. New York: Dell, 1979.

How to Use a Law Library. San Francisco, CA: People's Law School, 1976.

An Introduction to Facilities for Hazardous Waste Management. Negotiating to Protect Your Interests. A Decision Guide for Siting Acceptable Hazardous Waste Facilities in New England: Criteria for Evaluating Sites for Hazardous Waste Management. Boston, MA: New England Regional Commission, 1980. Available from the New England Governor's Conference, 156 State Street, Fourth Floor, Boston, MA 02109. $6.00 per set.

Siting of Hazardous Waste Management Facilities and Public Opposition, a report prepared by Centaur Associates, Inc. for the U.S. EPA, Office of Solid Waste. Washington, D.C.: 1977. Available from U.S. EPA, 401 M Street, S.W., Washington, D.C. 20460.

Public Action Kit. Washington, D.C.: League of Women Voters of the United States, 1730 M Street, N.W. 20036. 1976. Publication #629. $3.00, plus $0.50 shipping.

Accidents And Illegal Or Abandoned Sites

How about the waste dumps that existed prior to the passage of RCRA in 1976? Some of them are still around. Not all of them have been found, much less cleaned up. Even with the regulatory program established by RCRA, there will almost certainly be unscrupulous people disposing of hazardous wastes illegally and unsafely. There are also accidents that spill hazardous materials. How would you identify a spill or recognize an illegal or abandoned dump site, and what would you do if you found one?

Recognizing Sites

Some sites are easy to recognize. There are piles of drums where they should not be -- in swamps, woods, along roadsides, or in vacant lots or fields. Some may be leaking and you may smell odors that do not belong there, like the odor of turpentine, paint, glue, or rotten eggs. Vegetation may be dead in the area of the drums.

Other sites are not so obvious. Drums are buried or there is a discharge of liquid. You may not see drums, but you may smell the odors, and you may see barren spots in the midst of healthy swamp, woods, or meadow. Vegetation along the roadside may be dead if the hazardous waste was sprayed on the road along with road oil. You may see a significant quantity of oil or oily sludge on the ground or in the water. This is sometimes due to normal motorboat traffic or decaying vegetation, but it may also be due to illegal dumping of oily waste.

Some of the most serious examples of uncontrolled hazardous waste sites have been within buildings, notably abandoned warehouses, factories, and even apartment buildings. Once again, there will probably be drums and the telltale smells of organic wastes. Abandoned buildings are especially insidious, since they are often found in high-crime areas.

Sometimes, you may not see the dump itself, but you may see an abandoned tank truck mysteriously appear where it does not belong, or you may have reason to believe that a trucker who hauls away waste materials from your factory is not delivering them to a proper waste disposal site. These are legitimate reasons for concern.

Reporting Spills or Possible Illegal or Abandoned Dump Sites

The Ohio EPA has established an excellent emergency response team which is equipped to investigate illegal and abandoned hazardous waste dump sites. IF YOU THINK YOU HAVE FOUND ONE, DON'T TRY TO BE A HERO. LET EPA HANDLE IT. Minimum requirements for dealing adequately with a hazardous waste site of this sort include isolation suits, respirators, extensive training in safe handling of hazardous materials, and experience in the field. You probably don't have any of these. EPA does.

The Ohio EPA has established a toll-free "hotline" that you can use anywhere in the state of Ohio. It is 1-800-282-9378, and it is listed in directory assistance as Ohio EPA Environmental Hotline. Note that this is a different number from the toll-free Ohio EPA Environmental Information Hotline, 1-800-282-0270. The environmental hotline goes to the Emergency Response Unit and is used for emergencies such as newly discovered sites or recent spills. The environmental information hotline is covered only during business hours and is used to request information from the agency and inform the agency about non-emergency pollution

problems. However, if you call the information hotline after hours by mistake, a recording will give you the correct number.

When you call Ohio EPA, give them as complete a description of the site as you can, as well as an accurate description of its location. Illegal and abandoned sites have been discovered in Ohio and the agency may know about the one you've found. If so, they may be able to let you know fairly quickly how dangerous it is. If not, they will want to investigate it as quickly as possible.

Accidents or spills involving hazardous materials occur at an average of about seven per day in Ohio. Over 2,500 spills were reported in 1980. In each of the Ohio EPA's five district offices, the Emergency Response Unit maintains a well trained staff who are equipped to respond at short notice to any accidental or unauthorized release of contaminants into the air, land, and water.

Prompt reporting is essential. The quicker a spill is reported, the sooner it is cleaned up. As is true with abandoned hazardous waste sites, do not investigate a spill yourself. It too may be dangerous. Call the Emergency Response Unit on their toll free, 24 hour hotline and give as much of the following information as possible:

1. Date and time of spill.
2. Location of accident or spill.
3. Material released.
4. Probable cause of accident or spill.
5. Probable source of spill.
6. Volume and duration of spill.
7. Weather conditions including wind direction and movement of spilled material.
8. Distance to nearest dwelling.
9. Water supplies and surface water bodies that may be affected.
10. Personnel on the scene.
11. Other actions that have been initiated.
12. A contact person at the scene.

The U.S. Environmental Protection Agency operates a National Emergency Response Center, 1-800-424-9300, that can respond to hazardous materials spills. In Ohio, it is more efficient to contact the Ohio EPA, Office of Emergency Response.

Cleaning Up

Ohio law and the federal Superfund law provide several different options for cleaning up uncontrolled hazardous waste sites. The preferred solution is for the State to negotiate with the generator of the wastes or the owner, trucker, or whomever is responsible for the site and have them take responsibility for the clean-up. So far, the Ohio EPA and the Ohio Attorney General's office have been quite successful with this. Detailed information on the status of negotiations with various companies to clean up sites can be obtained from Ohio EPA.

Superfund money has also been made available to clean up some of the worst sites in Ohio. This involves funds from the National Hazardous Substances Response Fund, together with some State funds, made available to contractors to undertake the clean-up operation. Ohio EPA periodically assesses the severity of known hazadrous waste site problems and sends a prioritized list to U.S. EPA. The federal agency then establishes priorities for disposition of Superfund funds throughout the entire country.

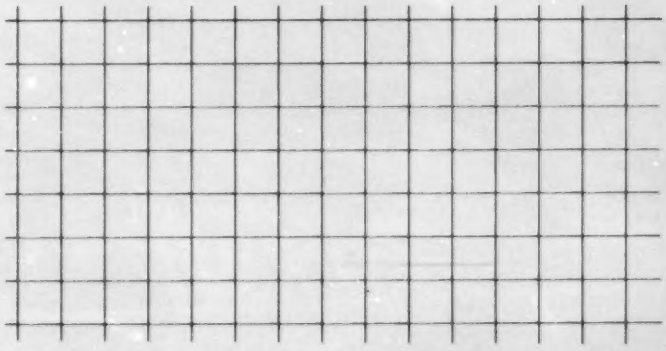
Questions

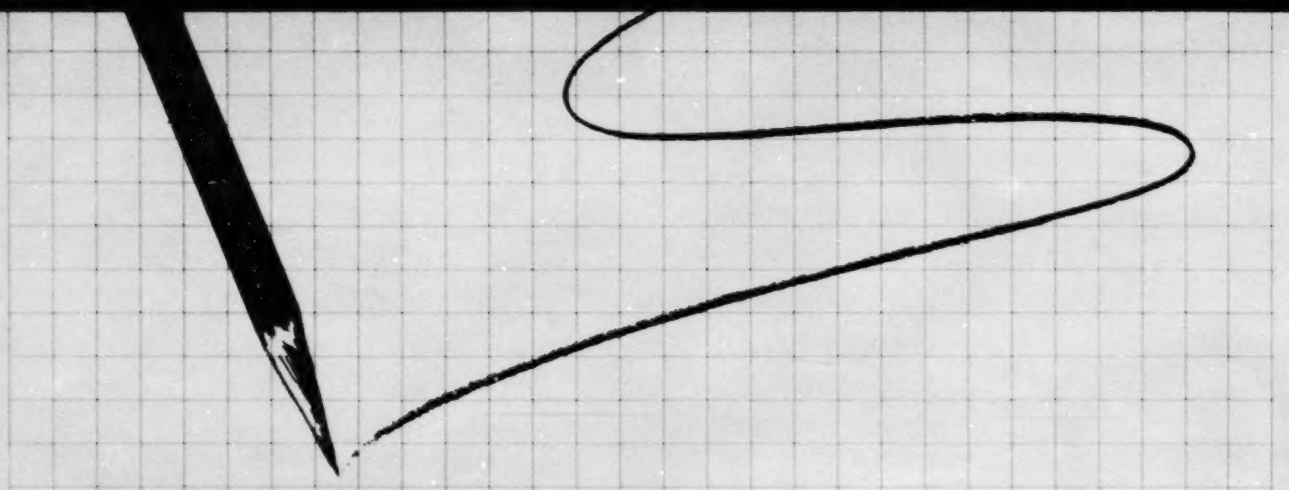
1. How do you recognize a recent spill?
2. How do you recognize an abandoned hazardous waste dump?
3. What do you do in either case?

Suggested Readings

Ohio Toxic Substances Emergency Telephone Guide. Columbus, Ohio: Ohio Environmental Council, 1500 West Third Avenue 43212. 1982. Free.

"Superfund at Square One: Promising Statutory Framework Requires Forceful EPA Implementation." *Environmental Law Reporter*,11 ELR 10101 5 -81.





Effective Citizen Involvement

Citizens have a better chance of effectively influencing hazardous waste decisions when using the following steps.

- Identify the problem, define what you will be working on.
- Find support and develop coalitions.
- Educate yourself.
- Build your case by getting information.
- Set goals.
- Build awareness, understand and learn to use the media.
- Seek enforcement.

By following these steps, citizens will be able to understand, organize, and influence a hazardous waste management decision. There is a need for citizens to be involved in issues at the state and federal levels, but there is usually a better response when working on issues of local community concern.

One of the strongest assests a citizen can have is a working knowledge of pertinent technical information and of the way the government operates. The information given in this section applies to citizens who want to be involved in cleaning up an existing problem or avoiding a possible new threat to human health and the environment.

Identify the Problem

The more information you gather, the more you become aware of all of the facets and complexities of a problem. At the beginning, you may be frustrated, feeling alone and unable to affect a positive outcome. If this is the case, gather together friends and neighbors with similar concerns. You will find it easier once others share responsibilities.

As a group, write down what you think the problem is and what you would like to see the outcome be. Then develop a list of unanswered questions. By gathering facts and answering these questions you will find it much easier to know what it is you are trying to accomplish. Your comments will always be more convincing when they are based upon accurate and thorough research.

A record should be kept of everything you do - people you contact, addresses, phone numbers, hearings attended. Everytime you learn something new, write it down. This record should be kept in one central place. It will come in handy later.

Find Support

Support may be easily solicited from organizations with similar interests. The Ohio Environmental Council has compiled an *Ohio Environmental Resource Directory* of all of the organizations and state, regional, and federal agencies concerned with environmental quality and natural resources management in Ohio. This is a good place to locate state and local public interest organizations who may be able to offer technical assistance and other types of support. Oftentimes these organizations will have limited resources but should be able to offer some assistance and advise on other organizations and individuals to contact.

Coalitions are a collection of organizations that work under one banner with a common goal. In many respects, they are one of the most valuable components of a community-wide campaign. Coalitions may consist of very divergent groups who come together to work on one issue or similar groups who are typically unified.

Establishing a coalition will add credibility as well as providing a mechanism for sharing technical, informationa, and financial resources as well as moral support. Environmental, labor, health professional, church, and civic organizations are

likely participants in an environmental health coalition. Throughout your effort you will also need to attract new volunteers and give them assignments to make them feel a part of the organization.

Technical experts from a variety of disciplines - biologist, attorneys, hydrologists, land use planners, geologists, writers, engineers, graphics artists - can be used to increase the group's understanding of the issue and enhance its effectiveness.

Funds will have to be raised to finance expenses. You must find a way to pay for postage, educational materials, printing and other costs. Try to solicit volunteer contributions of time and other resources. Fundraising events and membership fees may also be necessary to support your activities.

Educate Yourself

Throughout the entire effort but particularly at the beginning, attend as many meetings concerning your particular issue as you possibly can. This will give you a better idea of what key topices are and are not being discussed and how the planning process works. You should constantly monitor relevant developments and participate in meetings and hearings. Be aware of how the government operates and keep an investigative spirit.

Different levels of government operate in different ways. Try to get an understanding of how they function in relation to your concern. How is a facility sited? How do local emergency response personnel respond to a spill? How does a permit become approved?

The phonebook is a good place to start when initially contacting appropriate agencies and offices. As you become acquainted with the agencies, you should also develop a rapport with their staffs. This will ease the flow of information between you and the agency and will give you a sense for what individuals are action-oriented and experienced.

Besides keeping track of the government's role and knowing when and how to participate, you must keep abreast of technical information pertaining to your problem. Constantly develop a list of questions and try to obtain materials with the answers. By increasing and using your knowledge, you will gain respect as a reliable spokesperson and increase your effectiveness.

Public hearings are used in most planning processes. Hearings are announced through newspapers and sometimes through agency mailing lists. You may also inquire at the agency for the time and place of the hearing. Should you want to participate in the hearing, notify the agency's hearing officer in advance.

They will need to determine the hearing schedule and must allot time for each speaker to present their testimony. Be sure to know the hearing rules. If they are not followed closely, the hearing can be contested and declared illegal by the courts on procedural grounds. This will cause the entire hearing process to be repeated.

Build Your Case

This can be a difficult and time consuming step. You will now need to obtain the technical support data. You may want to establish the extent of pollution, gather field evidence, and talk with those who can provide technical documentation to verify your claims. You may want to conduct a stream walk to identify unauthorized discharges of chemicals, analyze ground water samples, and research historical information to trace the development of a problem.

Check with local university sources or experts in your organization for technical help. You should also check to see that statements made by the agency and others are correct and not misinterpreted. You also have the option of using the Freedom of Information Act to obtain information if you are denied access to public information by a federal agency. You may want to ask for a site visit or talk with personnel at a facility in question. Be prepared to look at factors outside of environmental considerations such as economics to support your case. Read the local newspaper diligently and collect pertinent articles.

Set Goals

Once your homework is done and people are interested, the next task is to meet and make plans. Review all the data, redefine the problem and decide what should be done. A master list of things to do should be developed and prioritized. A coordinator should then be assigned to ensure that each task will be accomplished. It is important in a volunteer operation to recognize those who make valuable contributions either in time, money, or in other ways that benefit the group.

Committees are often helpful in accomplishing larger tasks such as publicity, research, and fundraising. Meetings should be punctual and have an agenda that is adhered to. The more organized you are, the more efficient you become. Try to involve every representative of your coalition in making decisions.

Building Awareness and Using the Media

Building awareness is crucial to obtaining community support. When your group has an understanding of the issue, you must turn your efforts to educating the public. Write down questions you cannot answer and the points which seem to weaken your case. This will tell you how to improve your position and how to better communicate with the public.

Expanding your educational efforts outside of your organization will give you an opportunity to expand the coalition. Educational opportunities exist in the form of workshops, brochures, speaking engagements, slide shows, the creation of

a speakers bureau, and in the production of a newsletter. One of the most effective ways for reaching large numbers of people is through the media.

Build Awareness and Use the Media

Newspapers and the broadcast media rely on news to stay in business. You can do them a favor by furnishing them with news in a timely fashion. Let one person be the spokesperson for the organization and the media contact as well. This is very important and will avoid confusing the press. If you have access to professional public relations help within your organization, let them assist you in dealing with the media and preparing promotional material.

There are a number of publications that can be used to identify local media outlets. The yellow pages is one place to start. Good media coverage is much easier to get if your information is accurate, concise, factual, and above all else, newsworthy. It is also a big plus to get to know reporters personally. A rapport can be established over time. Once reporters know and trust you, they will consider you a valuable resource to be called upon for needed information.

The fundamental tool for working with the media is the press release. Others ways of communicating with the public through the media are the letter to the editor, an op-ed piece, public service announcements, talk shows, and a press conference.

A press release is a statement "released" to the press. There are simple but important rules to follow when writing and distributing a press release. Following these rules will help you get your information across to reporters in a concise, easy to read format. First of all, the news in a release must be timely and newsworthy. A release should be distributed in conjunction with an event or an action your organization is taking such as testifying at a hearing, visiting a disposal facility, or conducting a meeting. If possible make the event a photo opportunity.

A press release should contain the following information: date of release as well as the date the release was written, a contact person or two with phone numbers, and the name of the organization distributing the release. The release should be double spaced and be no longer than two pages. Within the first two paragraphs, the release should contain the who, what, where, when, and why of the news item. Another rule of thumb is no broken paragraphs between pages.

Evening papers, morning papers, and weekly papers all have different deadlines. Reporters have a lot of news coming at them. You will do them a favor by getting your release to them well in advance of their deadline. Evening papers have a deadline of around 10 a.m., while morning papers are more flexible with a deadline in the early evening. Weekly papers often print a press release word for word. Deadlines for weekly papers vary from paper to paper. Television stations should receive releases by noon. Radio stations, being a headline service, can receive a release as soon as it is printed.

A quote from the spokesperson is also advisable in a release. You stand a much better chance of seeing your release in print if it is well written with no typographical errors.

Many people read the letters to the editor on a regular basis. A letter to the editor can have a surprising impact. Papers usually try to reflect in their editorials positions that are for the good of the community. They also depend on their readership to tell them what the community believes is important. If enough letters to the editor are sent with the same message, that position often appears as the editorial position of the paper. The letter should be brief, not more than four paragraphs, and should express a single message supported by facts.

An op-ed piece is submitted to a newspaper. They appear opposite the editorial page. It must be well written, documented, and pertain to a subject of community interest. They are usually counterbalanced by an op-ed piece of an opposing viewpoint.

Public service announcements (psa) are used primarily by radio stations but sometimes are aired by television stations. They consist of ten, 20, 30 or 60 second messages. They can be used to announce a meeting or the availability of educational material and are not controversial. It is best to leave more information. In writing a psa, plan on one and a half words for every second. For instance, a ten second psa would contain about 30 words.

Both radio and television stations air talk shows. To become a participant in a talk show, call the public service director of the statoin and ask when time is available for you to appear on the show. Be prepared to be flexible in scheduling an appearance. A talk show interview requires someone who is articulate and a credible spokesperson. Personal appearance is also a consideration.

The press conference is reserved for special occasions, when there is something important and new to announce. If you use them too often, they will loose their effectiveness. The press conference is for the media only. Do not have representatives of your coalition asking questions during the conference. Press advisories should be sent to all of the media a week in advance to notify them of the time, date, place, and subject of the press conference.

A press conference should begin with a statement from a representative of the coalition. It helps to have charts, graphs or other visual presentations for the television and print media to

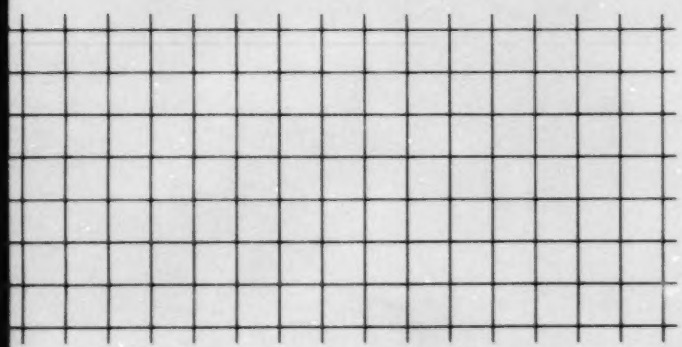
photograph. A press release, written copies of the speaker's statement, and materials providing background information should be made available to the media. The entire press conference should not last more than 30 minutes with most of that time occupied by questions from the media.

Seek Enforcement

You are ultimately the only ones who can make certain that your positions will be acted upon. If there is a trouble spot, bringing it to the attention of the appropriate authorities may not be enough. Enforcement actions must take place to ensure compliance with laws and regulations. Oftentimes you can work with the enforcement agency and assist them in compiling data to be used in enforcement proceedings. There are times when elected officials can be used to urge an agency to pursue enforcement. You should never threaten an elected official with a loss of votes. This is a sure sign of an amateur and will lower your credibility in the eyes of the legislator.

Publicity and constant pressure on the agency and elected representatives will produce quicker results. Remember that there are administrative, judicial, and legislative channels to push enforcement. When one does not work, try another.

Contributing to the remedy of an environmental problem can be a lot of work and you can learn a lot. But most of all, you can make a significant contribution to the improvement of health and welfare in your community.



Questions

1. Why do citizens usually get a more immediate response to their concerns at the local level?
2. What is the purpose of a coalition? How can one be organized where you live?
3. What are the types and sources of technical assistance available in your community?
4. What information will you need to present in a public hearing? What are the procedures for the public hearing you are interested in?
5. How will you recruit volunteers? Who will assign duties to the volunteers?
6. How do you write and distribute a press release?
7. What will be the most effective use of the media for your concern?
8. Why is it necessary to obtain ongoing compliance with environmental laws and regulations?

Suggested Readings

Communications Workbook, I & II. Helena, MT: Northern Rockies Action Group, 9 Placer Street 59601. $5.00.

Media Kit. Washington, D.C.: League of Women Voters of the United States, 1730 M Street, N.W. 20036. 1977. Publication #163. $1.00, plus $0.50 shipping.

Membership Recruiting Manual, by Bruce Ballenger. Helena, MT: Northern Rockies Action Group, 9 Placer Street 59601. 1981. $10.00

News Media and Communicators Guide. Should be available in larger metropolitan areas from the local chapter of the Public Relations Society of America for a nominal cost. Updated annually.

Ohio Environmental Resource Directory. Columbus, Ohio: Ohio Environmental Council, 1500 West Third Avenue 43212. 1982. $10.00 plus $2.00 shipping.

Ohio News Media Directory, by Gail West. 1981 edition. Available from Gail E. West, P.O. Box 316, Mount Dora, FL 32757. $32.50.

Training Materials on Toxic Substances: Tools for Effective Action, Books 1 and 2. San Francisco, CA: Sierra Club, 530 Bush Street 94108. 1981. $15.50

Resource Agencies And Organizations

Federal Government

U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, 401 M Street, S.W., Washington, D.C. 20460; (202) 382-4605.
- Resource Conservation and Recovery Act Hotline, (800) 424-9346.

U.S. Environmental Protection Agency, Region V, Waste Management Branch, 230 South Dearborn Street, Chicago, Illinois 60604; (312) 886-7435.

State Government

Ohio Environmental Protection Agency, P.O. Box 1049, 361 East Broad Street, Columbus, Ohio 43216; (614) 466-8565.
- Division of Hazardous Materials Management, (614) 466-7220.
  - Surveillance and Enforcement Section, (614) 462-6739.
  - Permits and Manifest Records Section, (614) 466-1586.
  - Engineering Section, (614) 462-6303.
  - Technical Assistance and Waste Management Section, (614) 462-6745.
  - Public Participation Coordinator, (614) 462-6743.
- Division of Public Water Supply, Ground Water Section, (614) 466-8307.
- Division of Air Pollution Control, (614) 466-6116.
- Division of Wastewater Pollution Control, (614) 466-7427.
- Division of Land Pollution Control, (614) 466-8934.
- Emergency Response, (614) 466-6542 or (800)-282-9378.
- Public Interest Center, (614) 466-8508.
- Environmental Information Hotline; (800) 282-0270,
- District Offices
  - Central District, 2244-46 South Hamilton Road, Columbus, Ohio 43227; (614) 466-6450.
  - Northeast District, 2110 East Aurora Road, Twinsburg, Ohio 44087; (261) 425-9171.
  - Northwest District, 1035 Devlac Grove Drive, Bowling Green, Ohio 43402; (419) 352-8461.
  - Southeast District, 2195 Front Street, Logan, Ohio 43133; (614) 385-8501.
  - Southwest District, 7 East Fourth Street, Dayton, Ohio 45402; (513) 461-4670.
- Hazardous Waste Facility Approval Board, P.O. Box 1049, 361 East Broad Street, Columbus, Ohio 43216; (614) 462-6981.

Ohio Department of Natural Resources, Fountain Square, Columbus, Ohio 43224; (614) 265-6565.
- Division of Geological Survey, (614) 265-6605.
- Division of Water, (614) 265-6717.

Public Utilities Commission of Ohio, Transportation Department, 375 South High Street, Columbus, Ohio 43215; (614) 466-3682.

Ohio General Assembly, Public Information Office, (800) 282-0253 or, in Columbus, 466-8842.

State Fire Marshall, 889 East Main Street, Reynoldsburg, Ohio 43068; (614) 864-5510.

Non-Profit Organizations

Environmental Resource Center, Hiram College, P.O. Box 1935, Hiram, Ohio 44234; (216) 569-7015.

League of Women Voters of Ohio, 65 South Fourth Street, Columbus, Ohio 43215; (614) 469-1505.

Ohio Alliance for Environmental Education, 445 King Avenue, Columbus, Ohio 43201; (614) 421-7819.

Ohio Environmental Council, 1500 West Third Avenue, Columbus, Ohio 43212; (614) 486-4055.

Sierra Club, Ohio Chapter, 65 South Fourth Street, Columbus, Ohio 43215; (614) 461-0734.

Waste and Toxic Substances Project, Environmental Action Foundation, 724 Dupont Circle Building, Washington, D.C. 20036; (202) 296-7570.

Business and Industry Associations

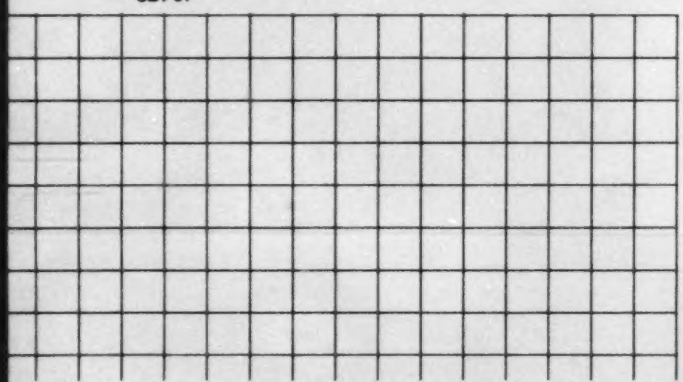
National Water Well Association, 500 West Wilson Bridge Road, Worthington, Ohio 43085; (614) 846-9355.

Ohio Chamber of Commerce, 17 South High Street, Columbus, Ohio 43215; (614) 228-4201.

Ohio Chemical Council, c/o Monsanto Plastics and Resins Company, River Road, Addyston, Ohio 45001; (513) 467-2394.

Ohio Manufacturers' Association, 100 East Broad Street, Columbus, Ohio 43215; (614) 224-5111.

Ohio Petroleum Council, 88 East Broad Street, Suite 1130, Columbus, Ohio 43215; (614) 224-6271.



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EVALUATION QUESTIONNAIRE AND ORDER FORM

The Ohio Environmental Council wants to know how this publication contributed to your understanding of hazardous waste management in Ohio. Please complete the evaluation and return it to the Council as soon as possible. We appreciate your cooperation and look forward to receiving your comments.

Date _____
Name _____
Address _____
City _____ State _____ Zip _____
Phone _____
Affiliation and/or occupation _____
What is your particular concern about hazardous waste management in Ohio?

_____
_____

Did you find the publication to be useful? If so, why? If not, why not?

_____
_____
_____

Can you recommend any improvements that could be made in the publication?

_____
_____

What did you feel were the shortcomings of the publication? Did you have trouble understanding any of the information?

_____
_____
_____

What else would you like to know about hazardous waste management in Ohio?

_____
_____

Do you know of others who should receive the publication? Please list complete names and addresses.

_____
_____
_____

Would you like the Ohio Environmental Council to assist you in locating a speaker on hazardous waste management for your organization? _____
Organization _____
Date _____ Time _____
Location _____
Contact _____
Would you like to receive additional information on the Ohio Environmental Council? _____
Would you be interested in becoming a member of the Council? _____

ORDER FORM

Should you like to receive additional copies of the citizens guide, please provide the information requested below and remember to give us your name and address in the spaces above. Allow three weeks for delivery.

Enclosed is my check of $ _____ made out to the Ohio Environmental Council for _____ copies of the citizens guide to hazardous waste management in Ohio.

Please bill me for _____ copies of the guide.

Copies Requested	Total Price
2 - 10	$1.00
11 - 25	$2.00
26 - 50	$3.00
51 - 100	$6.50
100 or more	You will be billed once your order is received.

To mail this form, remove from the text, fold, staple, affix postage, and mail to the Ohio Environmental Council, 1500 W. Third Avenue, Columbus, Ohio 43212.

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